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A Message from the President

"History is the Witness of Time"

Cicero

The 21st. century, a new millennium, has arrived, but let us not forget our past and those who fought so hard for our future. History enables us to see ourselves in perspective, for as has been truly said, a society without history is one which is adrift, as helpless as a human without memory. Society needs history, and a rapidly changing one even more so, as it is can thus make intelligent judgments and informed comment on current affairs, have a better understanding of important problems, and make useful predictions of the future. We can not escape from history even if we wished to do so, as our lives and decisions are governed by the past. The community of pharmacy must reflect on its past, and be hopeful for its future.

As we well know, pharmacists have ethical and professional responsibilities; they also believe that their actions have practical applications and ultimately will slay 'the dragon of disease'. During the last thousand years many have endeavoured to allay suffering. To pinpoint only a few names, we remember Hildegard of Bingen and her curative herbs, John Hall, Shakespeare's son-in-law, who so carefully wrote up his case-notes, Galen who was ridiculed in Molière's comedies, the great William Harvey, and even the seventeenth medical treatments on which Pepys commented. Pharmaceutical history needs active workers. It is a rich field; you may wish to research the history of drugs, of pharmacology or toxicology, or folk or even 'quack' medicines, the new technologies and unwanted side-effects. The field is vast.

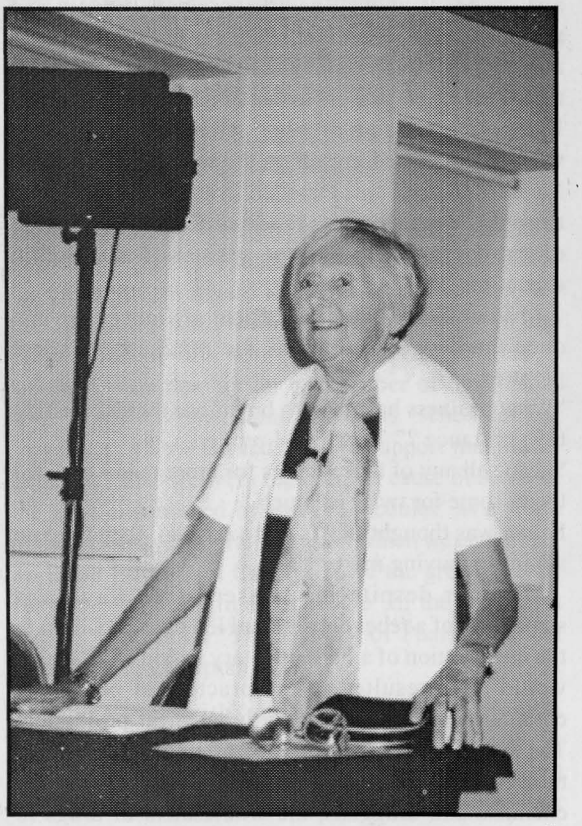
I have a conviction of the value of pharmaceutical history to the profession - and to the wider world. These meandering thoughts pass through territory which id not unknown but is sometimes unappreciated; they are mine, you will find your own.

"A thousand ages in Thy sight
Are like an evening gone,
Short as the watch that ends the night
Before the rising sun."

Isaac Watts. 1719.

This quotation is a memory from childhood, a first sense of the enormity of Space and Time, but now let us welcome the beginning of the New Millennium and our work in the future.

Enid Lucas Smith.



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A HISTORY OF THE LIVERPOOL SCHOOL OF PHARMACY.

(As seen through the eyes of Jacob Bell impersonated by Dr Michael Berry.)

Pharmaceutical Foundations.

My Credentials! My father, John Bell, was apprenticed to Frederick Smith, a famous London pharmacist at the end of the eighteenth century who owned premises on the Haymarket; married his daughter and in 1798 opened his own pharmacy at 338, Oxford Street. It was seen to be a poor prospect in such a thinly peopled district. On the first day he took ten shillings and gave change for a bad half sovereign.

At the age of twelve I was sent to a school in Darlington run by the Society of Friends of which my father was a staunch member. Later I was apprenticed to Thomas Zachery, a partner, and worked six days a week from 8 a.m. to 11 p.m. - but I was allowed to study in my spare time. I attended chemistry lectures at the Royal Institution and on physic at King's College. I also converted my bedroom into a laboratory complete with a chemical furnace. In leisure hours I enjoyed horse riding and art classes.

By 1841, father's two partners had left and as he aged I became responsible for the business. I took a house in Langham Place where I entertained chemists and druggists as well as artists, actors, writers and musicians. The latter did not meet with my father's approval, nor did he approve my change of habit from that of the strict Quakers to that of a London gentleman I suppose I was a bit of rebel! After I dressed up as a woman and placed myself on the women's side of the Meeting House I was expelled from the Quakers, and then this expulsion was repeated from the Academy of Art for drawing a scene witnessed at a public execution!

Father didn't like what I spent my money on, and once challenged me about the purchase of some pictures.

"What business hast thou to buy those things, wasting thy substance ?" To which I replied,

"I can sell any of those things for more than I give for them, some for twice as much."

Father was thoughtful, "Is that verily so -then I see no sin in thy buying more."

Father despite his conservative ways was something of a rebel himself and led the opposition to the introduction of a Parliamentary Bill in 1813 which would have resulted in the practice of pharmacy coming under the control of the medical profession. The Apothecaries' Act of 1815 allowed apothecaries to register as medical practitioners and allowed the chemists and druggists, the wholesalers of drugs to the apothecaries, the right of compounding and dispensing medicines and of selling them by wholesale and retail. The medical profession didn't approve because there was a loss of dispensing revenue to the apothecaries, and there might have been a gap in medical supplies, not initially filled adequately by the chemists and druggists. There was therefore a threat of further legislation.

In 1839 there was a Parliamentary Enquiry with the object of revising the law relating to the medical profession and supply of medicines. The Bill introduced to register all pharmacists and place them under the control of the medical profession was withdrawn due to pharmaceutical opposition. At the Crown and Anchor tavern in the Strand we appointed a committee to keep a watching brief on the progress of further proposed legislation. The idea of founding a permanent society of chemists and druggists was debated. As I wrote later, "Unity amongst chemists and druggists was only achieved in the face of direct opposition [from doctors], this unity of purpose being soon forgotten when the threat to their independence disappeared." What's changed ?

We were criticised for being a disorganised class with no standard of education or training, as opposed to the regular five year apprenticeship with organised courses and an examination at the end, for apothecaries. I realised the need to establish a system of self-government and to introduce a regular system of education to place practice on a more scientific footing. I was to spend much of my energies and personal finances in seeking these outcomes.

April 15th., 1841 saw a public meeting at the Crown and Anchor to discuss establishment of the Pharmaceutical Society of Great Britain. Amongst the objectives were "...to benefit the public, and to elevate the profession of pharmacy, by furnishing the means of proper instruction." A hundred signatures were appended and five thousand copies of the report sent across the country. On June 1st.,1841 in a public meeting 'Regulations for the Society' were accepted after consultation with chemists, druggists and medical practitioners.

Countrywide correspondence opened up as a result of the publication of my pamphlet, "Observations addressed to the Chemists and Druggists of Great Britain on the Pharmaceutical Society". Vision brought order out of chaos and unity out of dissension. Within two years the Pharmaceutical Society was granted a Royal Order of Incorporation.

Council suggested that the London School of Pharmacy should be closed, and the resources devoted to it be then used to provide grants to independent teachers of pupils successful in the Society's examinations. Such a policy, it was believed, would

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encourage the setting up of provincial schools of pharmacy. In the event this did not happen, but the desire to see teaching thrive in the provinces became my motivation for a visit to the Liverpool Chemists' Association.

The Visit to Liverpool

On Monday afternoon 4th. June 1849 I visited Liverpool to address members of the local Association at the Queen's Hotel in Lime Street with a view to starting a branch of the Pharmaceutical Society. As reported in the *Liverpool Mercury* four days later the meeting was attended by Robert Clay of Bold Street president of the Association, and its secretary, J.B. Edwards who was later to become a member of Council. Clay had been involved with David Waldie in some of the early research on chloroform in Clay's premises, and later was to become one of the fledgling school's lecturers.

The 1840s was a difficult decade. After the repeal of the Corn Laws aid was getting through to the hungry and the Liverpool city fathers worked hard to improve the situation. In 1846 the Liverpool Sanitary Act was passed, the first Medical Officer for Health in the country was appointed, the railway line from Preston was opened, and St. George's Hall was being built across from the hotel. The new Philharmonic Hall opened and Jenny Lind gave concerts, but on the opposite side a disastrous cholera epidemic swept the city.

In the same year the building of the Liverpool Apothecaries' Company, founded in 1836 with a capital of £100,000 was destroyed by fire. The company had been formed to import, prepare, compound and sell drugs and medicines by wholesale and retail, as well as deal in surgical instruments.

I outlined the Society's aims and urged the formation of a Liverpool branch, illustrating my points by reference to the Liverpool Apothecaries' Hall which had been established by medical practitioners because they claimed they could not rely on the accuracy of the dispensing or prepartion of medicines by local chemists. As I had pointed out in the first volume of the *Pharmaceutical Journal*, if the Society had existed prior to the establishment of the Apothecaries' Hall, this institution would never have been contemplated. I finished by appealing to the city to extend that same zeal and determination which it had shown in commercial pursuits to a branch of science allied to a profession.

Specifically, I appealed for an effort to be made in education of the locally based pharmaceutical apprentices; for the establishment of a school of pharmacy; and as a starting point that the city should make available the facilities of the Botanic Garden where some formal teaching in materia medica could begin.

My proposals met with modified acceptance. The meeting adopted the title of the Liverpool Chemists' Association in preference to that of Liverpool branch of the Pharmaceutical Society because they thought this would encourage others of like calling to join. The members undertook to establish facilities for education and due to its efforts the first School of Pharmacy took shape and gradually evolved over the years.

The First School

In August and September of 1849, Dr Joseph Dickinson of Liverpool Medical School gave three lectures on 'Classification of Plants' at the Royal Institution in Colquitt Street, and demonstrations started at the Botanic Garden. The lectures started at 7 a.m. so that apprentices could attend before starting work at 8 a.m. In March 1850 the Association decided to use the laboratory of the Royal Institution for pharmaceutical chemistry lectures which were started on the 3rd. April by George Hamilton with 22 students. In September 1850 the laboratory classes recommenced and Latin for pharmacy was taught by Reverend J. England, headmaster of Liverpool Institute High School.

In 1851 the Association appointed Dr John Baker Edwards to run a school of pharmacy. He emigrated in 1866 to Montreal, closing his business. Student numbers were low in the 1850s, only six, and by 1862 were down to three! A museum and library were proposed by the Association's council in 1853, and after negotiation the committee of the Royal Institution granted free use of a room. The library was opened in 1855. This was the beginning of a long connection between the Institution and the School of Pharmacy

Shortly after this, in 1859, I was to bow out of the scene at the all too early age of 49 and I have since resided in the place provided by so many friends in Tunbridge Wells. You can imagine, therefore, how immensely grateful I am to the many who have kept me updated with regard to events since then, and for the literature with which I was supplied in the preparation of this address. I understand there is amongst your number an ex-member of the faculty who in his day was famous for his 'schedules' or 'handouts'. (Now termed 'lecture support material' I believe.) I fear we were the indirect cause of some of the grief engendered by these 'schedules' as a result of the legislative programme upon which we embarked. To Brian Edwards, I therefore owe the greatest debt. He left behind his final 'schedule' in the form of a Master's thesis on 'The History of Pharmaceutical Education in Liverpool'.

To continue with the story of Liverpool's pharmaceutical education.

After Dr J.B.Edwards' departure in 1866, Edward Davies, an analytical and consulting chemist was

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appointed Principal and lecturer in chemistry, whilst Dr W. Carter ran evening classes in materia medica, pharmacy and botany. Low numbers however continued throughout the 1870s and 1880s.

In 1885 a Mr Sumner published a racy article on the beneficial effects of hydrochlorate of cocaine during rough passages across the Channel. One grain had no ill effects and had proved a marvellous preventative of sea sickness, he had even been able to enjoy the roll and motion of the ship in very rough seas.

That same year Principal Davies resigned his position and the first School of Pharmacy closed.

The Second School.

In 1882 John Septimus Ward, pharmaceutical chemist and prize medallist of the Pharmaceutical Society, opened a second school. The owner of a business in Oxford Street, Liverpool, he started to give private lessons, and in September 1883 commenced night classes. These ran through to the January of 1884 by which time he had also begun classes for the Society's Preliminary, Minor and Major examinations.

By 1885 he was using the title 'Liverpool School of Pharmacy'. The School could no longer be housed in his Oxford Street premises by 1889 so on 1 January 1890 it was moved to 24, Newington where there was a larger lecture room as well as a balance and microscope room, a museum and two laboratories.

Ward died in 1892 when only 36. The new Principal was a former pupil, Robert Charles Cowley, Ph.C., Student numbers increased and the School moved in 1894 to Sandon Terrace, and again in 1904, to Royal Buildings, Colquitt Street.

Cowley left in 1908 to become Principal of the Brisbane College of Pharmacy, and another former student became Principal in the person of Henry Humphrys Jones. He was to remain Principal for 49 years until his retirement in 1950. By the end of that period it was the last private School of Pharmacy in the country. In 1919 it had moved to Blackburne Place; later the premises were enlarged and still remain a part of the university.

Henry Humphrys Jones - 1908 - 1950.

Born on a smallholding which rises sharply over the crest of a hill at Trefaenan, Caernarvonshire, and backed by a dense forest, the farm looked out over a glorious view of the mountains and the Conway valley. The old home was the base for a close-knit family which had traditions of service to the community through the local chapel, the Council for the Preservation of Rural Wales, and the County Council.

Everyday, regardless of visitors, was started with family devotions after breakfast, the Bible was read and his father knelt in prayer before the family. He records in his autobiography *My Yesteryears* how, "the thought struck him that God was ruling and controlling men, like Jacob despite his tricks and Joseph despite his good luck and adroitness, and that it was all for the good of mankind and the glory of God."

These early influences inevitably had an effect on a life which was lived with a heart for Wales and the Welsh language, for God, for family, for his fellow citizens, and ultimately, for his calling as a teacher. Nowhere are some of these passions better evidenced than in his remarks recorded in the frontispiece of the menu for the Liverpool School of Pharmacy centenary dinner held at the Exchange Hotel in 1949.

A Welsh speaker, he transferred his membership to the English Presbyterian Church for the benefit of his life time companion Bertha. He served on six occasions as president of the Association, worked with Clay and Abraham in their Bold Street business, and who became head of a School which during his time graduated 5,500 students. He criticised, surprisingly perhaps, the 'All Welsh rule' for the Welsh National Eisteddfod, was a member of the Welsh Choral Union, president of the Free Church Federal Council, and the Presbyterian Church of Wales, became a magistrate, an active Liberal supporter, and was appointed by George VI High Sheriff of Caernarvonshire.

He delighted in foreign travel including to USA and Canada in later years, and saw it as a great honour that the Old Students' Association, not only held a dinner for him and presented him with a silver casket, but created and named a Scholarship Fund after him.

More recent times.

Following Humphrys Jones retirement in 1950, the School was led by Thomas Linley Bowyer who was to see it through a period of institutional change when the School became a part of the Liverpool Regional College of Technology. Bowyer, an old student of the School, qualified in 1928, worked with Ayrton Saunders and was head of the Birmingham School of Pharmacy during the difficult 1939-45 period. He died after a short illness in 1968 and Norman Peter Booth wrote of him in the September *Journal* that he had carried on the Humphrys Jones tradition of excellent teaching, a caring disposition built on Christian principles and a keen whimsical sense of humour. He was a Methodist, an Everton supporter, keen on outdoor pursuits and a member of the Civil Defence.

Dr Vernon Walters was the next head of the School of Pharmacy and he saw another major change as the College now became a part of the Liverpool Polytechnic in 1970. Vernon was retiring by nature, difficult to get to know on close personal terms, proud of his Welsh homeland but a determined fighter for the causes in which he believed. He was passionate about the introduction of an 'All-Honours' course in

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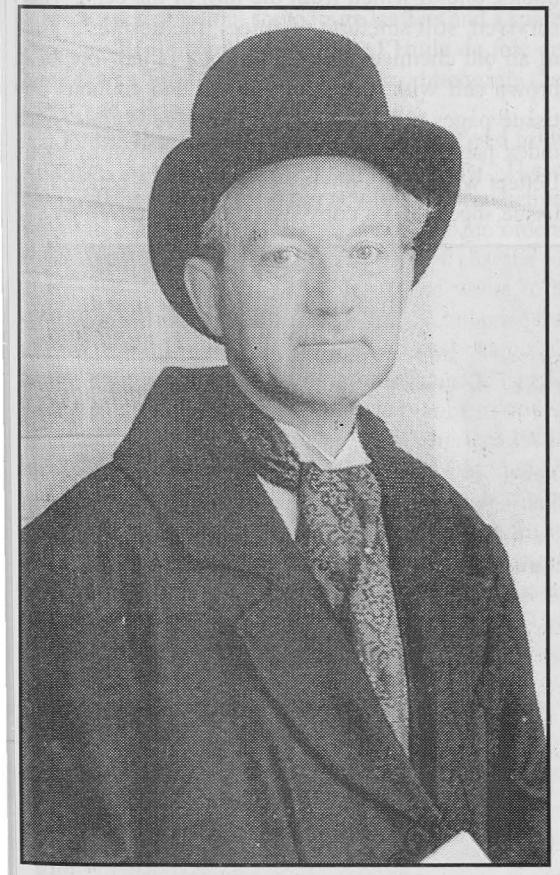
pharmacy and introduced the word 'cohort' to the Examining Board vocabulary; over a matter of principle he marched his staff up the hill to the Rector's Office in order to make his point and show the powers-that-be their strength of feeling on the issue. He never did however conquer the Venetian blinds in his office and was surprisingly unabashed by the students' treatment of him at pantomime time.

In 1988 the School became a multi-disciplinary School of Health Sciences which included Sports Science, Biomedical Science and Nurse Education! At this time Professor Frank Sanderson became Head on Dr Walters retirement, with Dr (now Emeritus Professor) William [Bill] Marlow as Head of the Centre for Pharmaceutical Sciences. After a second re-organisation in 1992, the School of Pharmacy and Biomedical Sciences was led by one of Bill Marlow's former Ph.D. students, Professor Kelvin Chan. An 'all singing, all dancing' pharmaceutical scientist who had returned to England after a time at the Chinese University of Hong Kong, and ultimately became Director of Research. A world famous pharmaceutical technologist with a special interest in tabletting, Professor Michael Rubenstein, took up the post of Director of the School in 1994 and continues in post.



Dr Michael Berry posing as Jacob Bell

REVIEW.

Wege judischer Apotheker. Emanzipation, Emigration und Restitution: Die Geschichte deutscher und osterreichisch-ungarischer Pharmazeuton 2. erweiterte Auflage.

By Frank Leimkugel. Govi-Verlag Pharmazeutischer Verlag, Frankfurt-am-Main, 1999; pp.248.

ISBN 3-7741-0738-6

The historical development of Jewish pharmacy throughout Europe prior to 1860 presents a tortuous path involving the initial problems of acceptance, both by the Christian community of acceptance and for registration and ownership of pharmacies. A significant number of Jewish pharmacies were established in major cities such as Berlin, Breslau, Hamburg, Prague and Vienna, and Jewish pharmacists began to cooperate in the politics of European pharmaceutical organisations.

As 'aryanisation' progressed in Hitler's Germany of the 1930s, by 1936 no Jew could own a pharmacy, or by 1939 even train in pharmacy, lease a pharmacy or retain a licence to practise. From 1933 onwards many Jewish pharmacists emigrated to friendlier countries such as Britain, Palestine and the USA where after special preliminary exams. they could practise; the Third Reich expanded and so more Jewish pharmacists emigrated, for example from Austria. As the Germans turned the screw, the trickle of emigrants became a flood. About a fifth remained and disappeared into the camps and ghettoes.

In his carefully researched book, Leimkugel has considered the origins of the Prague Jewish families before emancipation and the rise of Jewish pharmacy in Germany and Austria with interesting comments on specific Jewish pharmacists in the pharmaceutical industry and in politics, and the Berlin Apotheker Orchestra. The author summarises the registration conditions then required in the refugee lands of Great Britain, USA, South America, Australia and South Africa. Consideration is also given to post-war compensation and restitution.

A valuable appendix offers tabular and diagrammatic presentations of German and Austrian Jewish pharmacists including professional status, domicile, countries of origin and emigration, annual numbers emigrating and the few returning post-war; roughly one half of them succeeded in emigrating. A biographical table of 524 names shows as far as is possible, life dates, domicile in 1933, professional area, place of emigration and status after the war. An index of 32 archives and specific references to journal sources are placed at the foot of the relevant page. An English summary and an index of 832 names completes a comprehensive study.

W.E.Court

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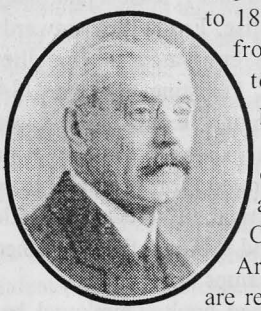
Mr Gulliver's Letter Book
A Belgravia Pharmacy
One hundred Years Ago

H.V.Roberts

No.6 Lower Belgrave Street is one of a row of shops built in 1845-6 by Thomas Cubitt to serve his new development on the then Marquess of Westminster's Ebury Farm estate in what soon came to be known as Belgravia. In 1852 William Gulliver (MPS 1851) took over the tenancy of No. 33 Lower Belgrave Street (re-numbered to No.6 in 1874), and about thirty years later also took over another and older business on the opposite side of the street. The latter pharmacy, No.23 (now No.43) was occupied up to 1842 by George Routledge and John Lightfoot, 'Surgeon & Chemist', subsequently by a C.Anderson (MPS 1842) and from 1875-83 by Walter Gibson Anderson.

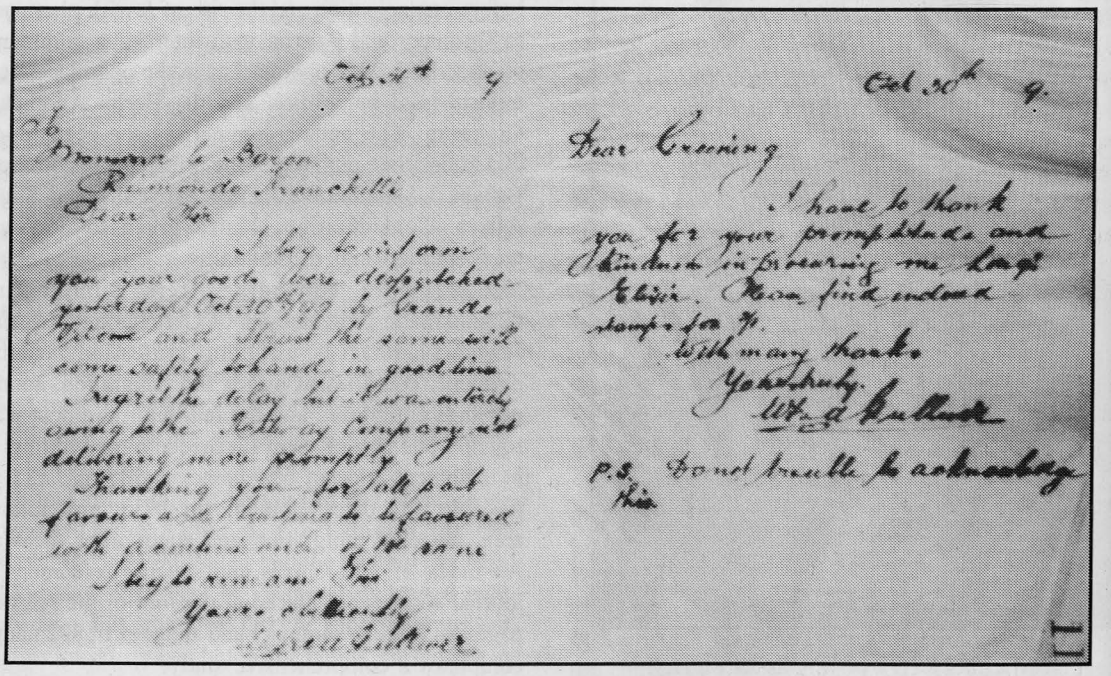
In 1890 William Gulliver was succeeded by his son Walter Frederick. Prescription books survive from 1831 to 1833 and Anderson's books from 1844 to 1893. These, together with Gulliver's prescription books from 1845 to 1912 and a number of ledgers dating from 1837, are now in the care of the City of Westminster Archives; subsequent books are retained in the still existing pharmacy at No.6 Lower Belgrave Street.



The shops in Lower Belgrave Street had been built to serve the residents in Chester Square, Eaton Square, Ebury Street and the immediate neighbourhood, but by the end of the century there were regular customers in Wilton Street, Chapel Street, (where there was also a branch of Savory & Moore's), Buckingham Palace Road, and in Grosvenor Gardens and Victoria Street, both now mainly offices but then largely residential.

Beyond Victoria Station there were customers in Eccleston Square and St. George's Square, and further afield in Chelsea, Kensington, Mayfair, Swiss Cottage, Hendon, Battersea, Blackheath and Hampton Court. Outside London, Mr Gulliver had customers in every part of the United Kingdom, including several in Ireland and a few on the Continent. Many of these were people with London residences occupied only in the 'Season', but who found their Belgrave Street chemist just as accessible by post from their country houses in Gatehouse-of-Fleet, Nostell Priory, Penrhyn Castle, Chevening, the Isle of Wight or Ireland, as from Eaton and Chester Squares.

The post was the normal method of communication when very few people had the telephone. Mr Gulliver kept a copy of all outgoing letters in a series of letter books, one of which from the turn of the century has survived, still smelling of spices, the nostalgic smell of an old chemist's shop. The book is half-bound in brown calf with dark blue boards, and contains 500 tissue pages, 10 ½" x 8", with twelve double sided index pages at the front interleaved with blotting paper. Letters written in copying ink were laid beneath the tissue sheets and a copy was then transferred by use



A page from the letter book, with copies of letters dated 30th. and 31st. October 1899

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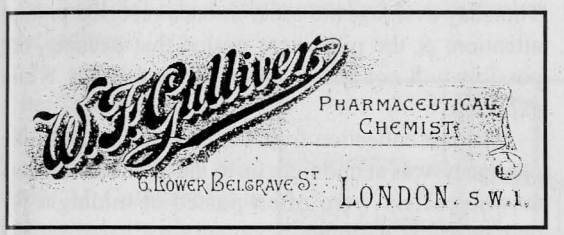
of a book-press. There are usually two letters to a page with occasional longer ones occupying one or more whole sheets. The 500 pages actually contain copies of 828 letters, all written between October 20th., 1899 and May 21st., 1904.

The first letter in this book is addressed to Capt. Durham Plomer at Oxford Barracks, Warrington,



Letterhead, also used on prescription envelopes

acknowledging an order for 'Pomade Cornioli', and on the same day Mr Gulliver wrote to Madame Cornioly, 1 Rue de la Paix, Paris, in French, ordering the pomade and some Lotion Cornioly together with some more leaflets. He adds however that in spite of all his efforts, "la vente marche très doucement" because the price is too high. Copies of several more orders appear in the letter book, including one for the lotion "for removing scurf, dandruff etc.," and for a dozen bottles of lotion, some more leaflets and a spare carton as "Unfortunately a bottle of Huile de foie de Morue was broken on the counter, damaging the carton and all the leaflets."

On October 27th 1900 an order was received from Mumbles, South Wales for 'Pistoja Powders'. These were obtained from the Pharmacy of the Benedictine Sisters in Pistoja, near Florence; about a dozen orders were sent during the year. Mr Gulliver's charges to customers seem very reasonable. As he wrote to a colleague in Clapham, "There is no fixed retail price for small quantities in this country ...[the nuns] charge 26 francs [then one guinea] for 6 months' cure ... I have generally charged them at 4/- per month to cover expenses." Writing to a customer in Dublin in April 1901, he explained the 'high price': "Mr Gulliver has tried to obtain an agency ... but the Nuns are unwilling to grant one, he is thus obliged to charge as above to cover working expenses, transmitting money & general expenses." These included 1½d postage on the 4s. cure.

To a customer in Castle Douglas he wrote, "The Powders should be taken before breakfast, if this hour is not convenient they might be taken immediately on rising, before lunch or dinner would not do as well." and a fortnight later, "... do not see any objection to warm water being taken in the morning as well, on the contrary would think it rather beneficial."

Early Training

Before taking over the business from his father, Walter Gulliver had had two years experience in the pharmacy of M. Goegg in Geneva as he told a Dr Troussseau of Paris who seems to have criticised his dispensing. "I have read your letter to Sir Evrard H.Doyle, Bart., and am sending you a letter to assure you the Lotion was made up quite correctly, and with the purest Sublime we can procure. In dispensing continental prescriptions the metric system is used, to avoid error in making calculations from one system to the other. I might also mention I have had two years experience in one of the best pharmacies in Geneva so am quite at home with foreign prescriptions. I beg to remain, Sir, yours obediently, W. Fred. Gulliver."

In August 1899 Mr Gulliver had taken as assistant M. François Torta of Turin who was anxious to get experience in English pharmacy. In February 1900 he sent a glowing reference to M.Torta's work and character to M. Ernest Lepinois of 7 Rue la Feuillade, Paris: "très intelligent ... il est diplomée en Pharmacie (Italie) et comprends bien la théorie et la pratique de la Pharmacie." Three years later, on February 14th., 1903, in a long letter to M.Torta, he wrote, "... have sent you 4lb of Bicarbonate of Soda in a bottle, with Howards' metal capsule over the cork as a proof of it being the genuine ... I was pleased to see Mr Goegg at the end of the year when he was lecturing at the Society of Arts .... We now have the telephone and many other improvements. ... My wife has learned to ride a bicycle ... all we shall want will be some nice weather to enjoy some rides."

On January 31st., 1901 Mr Gulliver wrote to M.J.Brun of Geneva about a misunderstanding over the imminent arrival of a M.Stoess who was proposing to take a temporary post as assistant at a particularly bad moment. "... the death of the Queen has virtually stopped all business and no doubt the London Season will be very bad for us ... there will consequently be less work for him to do and naturally less experience." However, three months later Mr Gulliver wrote to Mr. H. Churchill of Brighton. "I see in the Journal Suisse de Chimis et Pharmacie you are requiring an assistant speaking French....", and highly recommended Emile Stoess. He gave M. Stoess a written reference. "[He] has been actively engaged in the preparation of doctors' prescriptions & pharmaceutical preparations generally which he has always carried out to my entire satisfaction."

He replied on September 2nd. to a Mr P.R.Winkler c/o H.Brunck, English Chemist, Lucerne, regretting that he had no vacancy at the time, "...the West End is very quiet everyone being away...", but suggested he might try Roberts & Co., New Bond Street, or Wilcox Jozeau & Co., or an advertisement in the *Chemist and Druggist* or the *Pharmaceutical Journal*.

Wilcox Jozeau's retail pharmacy in the Haymarket specialised in foreign prescriptions as Mr Gulliver

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explained to a customer in Chester, "Not being able to dispense the two prescriptions sent, I sent them to Wilcox Jozeau & Co. as they do all my foreign work for me that I am unable to do myself. Of course I cannot undertake any responsibility of any inaccuracy on their part (should there be any) ...."

Efficient postal service

The post at the turn of the century could be very quick and reliable. On October 30th., 1899 Mr Gulliver acknowledged receipt of a prescription sent by a lady in Norwich for a 'special preparation' made by a chemist in Brighton, and 'has been obliged to wire for it' to the maker. On the same day he wrote to a colleague in Hove: "Dear Greening, I have a prescription written by Nicholson of Brighton ordering 3oz Elixir Salicyl Quinae Ammon (Long)", and asked if Mr Greening could get it for him as he did not know which of the two pharmacies called Long was the maker. The letter was delivered in Hove the same afternoon, the medicine obtained and despatched by train the same day, and Mr Gulliver's acknowledgment of receipt was posted the same evening, still October 30th., enclosing payment for the medicine, 2s.1d. in stamps, including carriage.

The post however was not without its problems, although most of them hardly seem like problems today, a hundred years later, as when he wrote to Oscar Corry Esq., in Bournemouth, "... your order received immediate attention, but there being no Parcel Post delivery on Sunday I fear will not reach you before Monday."

"To the Rt. Honble. Lord St. Oswald, Nostell Priory, Wakefield, Saturday December 23rd., 1899, Mr Gulliver very much regrets to hear the Mixture sent on Friday [Dec.22nd.] at 11.25 a.m. was not delivered at Nostell on Saturday morning by the first Parcel Post as it should have been."

On December 26th. he wrote, "Mr Gulliver begs to inform Mrs Wroughton [at Creaton Lodge, Northampton] her order was received on Saturday [Dec. 23rd.] at 11.18 a.m. and was despatched from here at 12.50 p.m. and should have been delivered on Sunday morning. As the second Post Card is dated Dec 25th. and they have not yet come to hand Mr Gulliver has thought it advisable to send a second bottle". And to Lady Neeld, Chippenham, "... her Post Card did not reach here till 5.30 p.m. It is consequently too late for the 4.30 country Parcel Post."

Lord St. Oswald on July 16th.,1900, now at Berriedale, Caithness was told "... his telegram of today did not reach Mr Gulliver till 4.48 which was too late for today's country post. He finds it was handed in at Berriedale at 2.50 p.m., was received in London at 4.8 p.m., but was not delivered until 4.48 p.m." Likewise on Saturday, October 10th., 1903 Miss Wakefield at Hassocks, was informed that he had "... this afternoon sent a bottle of Lotion No.93099 by rail, there being do not deliver it this evening kindly send to the Station for it."

October 4th.,1901, to Lady Dalrymple-White, The Roxburgh Hotel, Edinburgh, "...[your] esteemed order for Pills No.80077 did not arrive until 9 p.m. on Thursday evening; the order at once received prompt attention, & the pills were posted that evening, but possibly will not arrive quite as soon as Lady White expected."

The last collection from the pillar-box outside the pharmacy was at midnight up to the late 1930s; orders to wholesalers were often posted at midnight for despatch next morning.

Postage abroad was also remarkably quick without the help of air-mail. On January 16th., 1901 Mr Gulliver sent some feeding bottle teats to a customer in Hanau, Germany, which were returned and on the 22nd he wrote again acknowleding "Receipt of ½ doz. teats and is sending ½doz Allenburys per return." On July 26th., 1901 he sent to Pontresina, Switzerland "per Parcel Post a bottle of the Mixture No.86053 which he has concentrated to a teaspoonful dose, which should be taken by medicine glass measurement, not the ordinary metal teaspoon..." and three days later, "... he has this day forwarded per letter post a piece of Green Oiled Silk..."

On January 5th.,1903, he wrote to Col. Hy. Trotter C.B., H.M.Consulate General, Galatz, Roumania, "Dear Sir, I am this morning in receipt of a Post Card from Galatz dated Dec.31st with nothing written on it .... Can you please throw any light upon it ?" Then on January 15th begged "...to acknowledge receipt of [your] letter of Jan. 10th..."

There was no air-mail to India until 1929 but on February 27th.,1900 Mr Gulliver wrote to Capt. Bliss, Dumdum, Prov. Bengal, India, "Dear Sir, I have to thank you for your esteemed order dated Feb. 7th. which came to hand on the 26th..."

On May 23rd., 1900 Mr Gulliver replied to a customer in Sutton, Surrey, "... with regard to the postage the margin of profit on these Powders is so small that Mr Gulliver could not always pay postage, he will do so this one instance." Postal rates in 1900 were 1d for letters up to 4 ozs. and 3d. for parcels up to 1 lb., but Mr. Gulliver could hardly be blamed for charging the postage in view of the long credit he was expected to give and the frequent difficulty in obtaining eventual payment. As many as 130 of the 828 letters in this book are requests for payment.

"Mr Gulliver ... trusts Mrs Lemonius will soon be in a position to let him have a cheque for the balance £2. 7. 0. ... standing for nearly twelve months and is of

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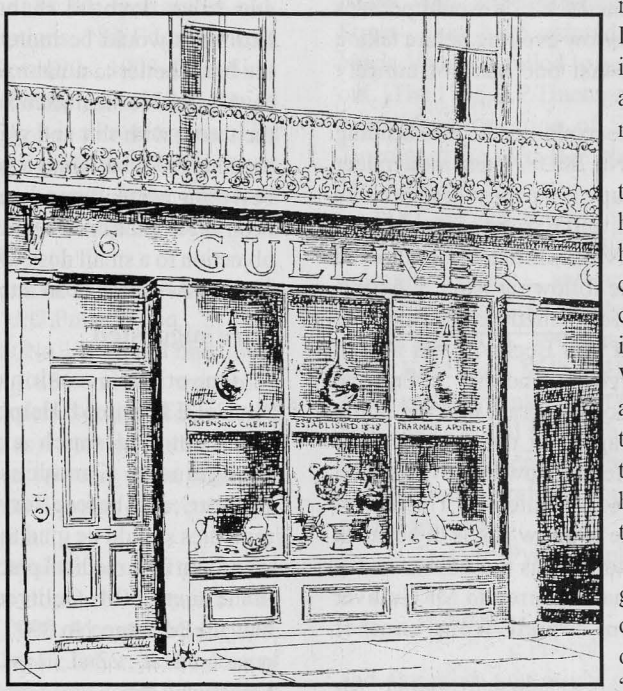
course worked at a small rate of profit." October 26th., 1899, "Dr Fitzgerald, ... Dear Sir, My collector will call on you on Saturday morning next and I trust you will favour him with a cheque for the amount of your account £18. 16. 7. On November 13th.,1899 he even made threats," ... having applied so many times for the amount of her a/c £1. 18. 0...if not paid by Saturday next...[will be] reluctantly compelled to take further proceedings."

He wrote a restrained letter to the Countess of Wicklow, Shelton Abbey, Ireland on February 8th., 1900," Mr Gulliver begs to acknowledge with thanks the receipt of a letter containing a/c and six halfpenny stamps, as the amount of the a/c is £1. 6. 3. he thinks "the balance must have been overlooked in sealing up the envelope, and has thought it advisable to at once advise the Countess of Wicklow of the matter." Whilst on January 21st., 1901, he wrote: "The Marquess of Ely, Fermanagh, Ireland ...[that he]again begs to call attention to the enclosed a/c which has been standing since May 1898 ..."



Counselling

The majority of letters in the book however are replies to enquiries about prescriptions or to requests for advice. As for example, "...Mr Gulliver would describe the Mixture as being a tonic digestive, it is not an 'aperient', although it contains a small quantity of Syrup of Rhubarb which wd. of course have a very gentle action on the bowels." Or, " Mr Gulliver could not make the Mixture No.68971 into Pills. He could make some Powders to represent it, but as these would be somewhat difficult to mix with water, he has thought it better to adhere to the original prescription."

Sometimes he sought clarification: "... The Lady Penrhyn has omitted to state what kinds of Soloids are required. Messrs. Burroughs Wellcome apply the word 'Soloid' to all kinds of compressed substances that are not to be used as internal medicines...." Or gave a lesson in terminology, "The Hon. Mrs Raymond Parr ...Gatehouse of Fleet, N.B.[North Britain], The Carbolic Acid sent is a solution in water made of the strength 1%, we do not call this 'Carbolic Water' but Carbolic Acid of whatever strength it may be wanted ...."

In others he was reassuring, "... the Benzoic Acid Lozenges are prepared according to the Throat Hospital Pharmacopoeia each lozenge containing ½ grain of Benzoic Acid. Mr Gulliver tasted one yesterday when Miss Twiss called and again this morning, and if eaten slowly the effect of the Benzoic Acid is readily felt both on the tongue and throat." Or, "I have made up a bottle of Eye Lotion according to the new prescription.... With regard to the previous Lotion, I can assure you it is made up quite correctly. and with the 'purest materials' I can obtain."

Occasionally he blamed the Post Office for rough handling, "... regrets to hear the last lot of cachets... shed their contents into the boxes ... if the Countess of Wicklow will return them as they are he will have them re-made ... possibly the shaking in the post has helped to loosen them."

On other occasions he gave good advice, as he did to Mrs. G.B.Fitzgerald of Lymington, Hants., "... a box of Salt of Lemons which is the only thing to remove ink stains...." Or to " Miss Rennie, Sandplace RSO, Cornwall ... small bottle of Strong Solution of Ammonia which is the best thing he can suggest for the 'Bites' of Insects, the stopper is elongated so as to touch the centre of the bite with the liquid ...." On another occasion he wrote, "I am sending you some Lotion & Oil of Lavender to apply to the little girl. The Oil of Lavender is to prevent bites and should be applied by just touching the forehead and hands and other parts with the cork just moistened with it." Cosmetics were also not neglected, "Mr Gulliver begs to forward ... a ¼ of the quantity of Lotion No.35346a which has been made of the usual flesh colour..." and also shows a sense of caution in the same letter, "Half a dozen 7 grain Antipyrine Cachets were sent on July 14th. so Mr Gulliver is not sending more... He regrets that it is not possible to refill the Smelling Bottle with anything other than Aromatic Vinegar."

As he does in the next letter, "... he has nothing ready made for such a case, and he would hardly feel justified in prescribing a Mixture ... he would suggest that she should obtain a prescription from her Dr.;

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this of course he would be very pleased to make up."

Doctors often gave inadequate instructions which he amplified, "Mr Gulliver begs to forward ... a bottle of Essence of Senna Pods as ordered by Dr Crocker. He wishes Mrs Wodehouse to take two teaspoonfuls for a dose ... he does not state when but Mr Gulliver would suggest the early morning as the best time." As he does in another letter, "Mr Gulliver would suggest that a dose of the Mixture be taken this evening. With regards to the Pills ... it would perhaps be better to wait until tomorrow evening before taking one as the effect of the last one has not entirely stopped."

On another occasion he explained he was sending "6 pills from prescription No.78638. These are a milder pill than the last made up ... as they contain less Compound Colocynth Pill, and Extract of Henbane in the place of Extract of Nux Vomica." He showed considerable caution in the following letter, " As this Lotion contains a powerful 'scheduled poison' Mr Gulliver must request that Mrs Beckwith has it used only under her own supervision, and that ... if any be left it should be poured down a drain and the bottle broken ...." As he does again in the next to "Mrs Phillips, Old Dalby Hall, Melton Mowbray. With regard to the Fowler's Solution of Arsenic and Tincture of Orange Peel, he would like to know if it is to be taken under the advice of a doctor as it is not written in the usual way and signed. It has occurred to Mr Gulliver that it may have been copied from another prescription."

Sometimes he gave practical help with dosage, "Sir John Williams having ordered Mrs Madgen a powder of which she is to use four drachms at a time Mr Gulliver has sent a wooden measure which if filled quite full and pressed down will hold approximately that amount." On August 27th., 1900 he wrote "Lady Bolton, Bridgwater ... Mr Gulliver has sent a small bottle of Salicylate of Soda and encloses one powder with this note which is an average dose that may be taken three times a day.... The Bottle of Spirit of Ammonia sent is only to be used for cleaning purposes" as he concludes that the Aromatic Spirit of Ammonia more commonly known as Sal Volatile was not wanted." On August 30th. he informed her that "... the Bottle of Liquid Ammonia would not be strong enough to apply to insect bites. He is therefore sending some in a special bottle with an elongated stopper." Then just after Christmas he sent "... a lotion to be applied to the inflamed toe joint ... with regard to the left toe turning in... a roll of lint or cotton wool between the toes" was useful. Holden Bros., 223½ Regent St., make tools specially for this purpose and will send a pamphlet free on application."

In some cases he urges caution, "... the Powders No.80596 were dispensed the last time (as well as today) three times the strength of the original prescription, and he has not thought it wise to again increase the strength as Mrs Graham sometimes takes two for a dose. They are not intended to be a purgative but to have an action on the liver."

In the case of Miss Trollope he tells her "... that 'Sulphonal Tabloids' in a proper dose are quite harmless, but as they are only a 'hypnotic' he is somewhat doubtful if they will be suitable ... the Bromides would be more suitable, they would calm the brain better ... a natural sleep would then follow."

His advice was often sought "... both gargling the the throat with salt and water, and Port Wine (but not together) will be found a good tonic to the throat. The best thing Mr Gulliver can recommend for a cold in the head is Ammoniated Quinine...", he did "not see any objection to a small dose of the Elixir Kola being taken once or twice a day as a tonic."

Care suggested

On other occasions he had some doubts. "Lt.Col.E.Durnford, Harpenden, Herts., Dear Sir, ... I have not had much experience in the use of 'Sanguinaria Canadensis' in the treatment of 'Cancer';and before forwarding you any of these remedies should be glad to know if you are advised to take them by a medical practitioner ...." And even more in the next "... Mr Gulliver begs to inform Mrs Hoare that the Mixture No.89977 has now been dispensed once on 21st., 22nd., 23rd., & twice today. As this is repeating it much more frequently than if taken strictly according to the directions, he must request her to have it re-dated by her medical man."

Mr Gulliver found that London's atmosphere caused problems and explains this when forwarding "3 doz. Dinner Pills and 1 doz. Blue Pills, both of which have been carefully silvered and are now quite white. Unfortunately we are unable to prevent the smoky atmosphere of London from affecting them, the same as it does all silver goods, and they will in the course of time turn yellow."

He notes that a mixture has no preservative when on Sept. 3rd., 1903 he wrote to "Mrs Hutton-Croft, St. Andrews, Fife, N.B. ... regrets to hear ... that the last bottle of Medicine from enclosed prescription has gone bad. They find however that there is no preservative in it ... that the last bottle they made up was on May 20th., ... nothing but distilled water is ever dispensed ... and they have a large Still for drawing water, which is never used for anything else."

In July 1900 he relates that he "has now prepared some Liquid Extract of Cascara from the old Pharmacopoeia, and the next time Mixture No.51414 is repeated he will be able to prepare it with that

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preparation." [The 1898 B.P. specifies percolation of 20 ozs of the powdered Cascara bark and evaporation of the percolate to 12 fl. ozs., then adding 4 fl.ozs. of alcohol and making up to 20 fl.ozs. of water, whereas the 'old Pharmacopoeia' (1885) method involves boiling 1lb. of powdered bark in water and evaporating the strained liquor to 12 fl.ozs., adding 4fl.ozs.alcohol, filtering again and making up to 16fl.ozs.with water.]

Prescriptions were the property of the patient and there were frequent demands for repeats of old, sometimes very old, prescriptions. "Sir Edgar Vincent KCMG MP, Chatsworth, Nov. 19th., 1903, Dear Sir, I beg to enclose your 1 doz. Powders No.34265 copied in our books November 1878. It is a Prescription of Dr Prescott Hewett's containing Gum 'Antacid' and Dover Powder with other things ... I regret being unable to post them yesterday, but it is a matter of some little time referring thus far back."

Other prescriptions were even older. On March 12th., 1900 he wrote to "J.C.Powell Esq., ... East Grinstead ... I have looked at No.13641 and find it was copied in our books in Feb. 1866 and was written by Dr G.Budd. In this case he orders 5 grains of Powdered Rhubarb in each pill, but as I cannot find a single instance during the last 15 or 16 years when you have had them made stronger than 4 grains I have thought it best to send the same again."

Sometimes he did not hesitate to alter the dose! On April 18th., 1900, "The Bottle of Mixture ... was prescribed for you in Nov.[18]92. It contains Salicylate of Potash, Sal Volatile & Chloric Ether; as the dose of the Salicylate is rather a large one I did not think it advisable to repeat it at that strength at the present time. The dose will now be 1/6 part three times a day." He would sometimes send a copy of the prescription as he did on July 31st., 1903 when writing to "Mdlle Kohly ... Walton on Thames, Dear Mademoiselle, I have looked through the prescription books as far back as 1872, and the only Mixture prescribed by Dr Hatchard and answering the description you gave of it is No.23861 of which I enclose a copy. It was originally written for Her Grace on August 14th., 1872 ...."

Letters to doctors.

The book contains a number of copies of letters to doctors. "Nov. 8th., 1899, Dr Peters, 13 Cadogan Place, Dear Sir, I find the Cocaine does not all quite dissolve in the Castor Oil, and on looking in text books on the subject I find it is a saturated solution, perhaps the lowness of the temperature today may have something to do with it.... Perhaps you will set it in a rather warmer place, and with an occasional shake, and more time, it will very likely all dissolve."

"April 26th., 1900, Dr Clark ... Dear Sir, Mrs Blackett ... has applied to me for some '; Morphia Tabloids' but not being authorised by you to supply them I have been compelled to refuse them. Mrs Blackett has consequently requested me to write to you asking you to call on her."

"June 30th., 1900, T.J.Maclagen Esq. M.D., Dear Sir, On finding ... you had ordered the maximum dose of Tr. Nucis Vom., I sent across to have it confirmed, unfortunately I ascertained you were out, so have dispensed it as written, and have thought it best to draw your attention to it." Three years later Tinct. Nucis Vom. appears again; "Dr P.F.Moline, Walton Street ... you have ordered the maximum dose of Tr. Nucis Vomic. I called to see you but found you were out. [The 1898 B.P.Tincture of Nux Vomica contained twice the proportion of Strychnine present in the Tincture of the 1885 B.P., this may have contributed to Mr Gulliver's concern.]

"Dr C.H.Gage-Brown ...with the accompanying note I am sending the Solution of Perchloride of Mercury, the vulcanite Syringe .. and one dozen LaminariaTents... Messrs Maw will not supply any less quantity."

On May 10th., 1901 there is a rather unusual letter to a J.Kidd Esq., M.D.of Hanover Square. "Dear Sir, As I am frequently called upon to dispense your prescriptions, and although I have culled from time to time what has been published as being your formulae, I should much prefer if you would be pleased to send me the following:

Tr. Ferri Pyrophosph.	1	in	5
" "	1	in	10
Tr. Strych c Nit	1	in	200
" c Phosph	1	in	200

and any other you might deem useful to me." Five days later he wrote to thank him for the formulae and his courteous reply.

On February 28th., 1902 he wrote to "Dr L.M.Earle, Gloucester Terrace, Dear Sir, Enclosed please find sample of Syr. Glycerophosph. Co. of which I spoke to you last evening .... On the opposite page I have given the formula ..." The formula given is identical to that which appeared later in the Formulary of the British Pharmaceutical Conference and in the B.P. Codex five years later.

March 28th., 1902; "Dr E.M.Euan Smith, Earls Court Road ... you have omitted the quantity of Pot. Bicarb... [I]have taken the liberty of dispensing it with 4 drachms which with the Ammon.Carb. gr.80 will nearly neutralize the Acid Citric."

Analytical work

Urine analysis was undertaken for doctors and also for private patients: "Sept. 29th., 1903, Dr Avery ... I have to report as follows. Sp.Gravity 1.0288, slightly acid, albumen none, Sugar present. The Sp.Gr. this time is higher than on any previous occasion, there is a larger quantity of sugar present and also more phosphates."

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"W.S.Robson Esq.KC, MP, Dear Sir, The last sample of Urine you sent for Analysis does contain a few small crystals of Calcium Oxalate, also a trace of sugar..."

Analyses were not restricted to urine: "Oct. 29th., 1900, H.Clarke Jervoise Esq., Uckfield, Dear Sir, The 'Bread' and 'Flour' sent have yielded on analysis the following results: Bread, Ash 1.09%; Flour, Ash 0.80%. Neither sample give any indication of added alum, and the flour is free from 'Potato Starch' ...." "Oct.13th., 1901 ... I have to acknowledge receipt ... of bottle of water for analysing. I regret to say the quantity sent is not sufficient, and to obtain an accurate report we wish it to be collected under special conditions. Half a gallon of water is required which should be collected in a glass stoppered bottle, the bottle to be first filled with the water quite up to the neck, this is then to be emptied away, and the bottle again filled, and the stopper inserted, the stopper to be tied in with leather cap."

Testing of thermometers is the subject of several letters and there is one reference to testing of weights: "... the circular ones are very nearly accurate, the square 2 drachm was considerably too heavy but that I have corrected. The amount of the inaccuracy is now so small that it is only shown on a very sensitive Chemical Balance."

Another service, still occasionally performed in the 1950s, was referred to in a letter of May 9th., 1901: "Dear Sir, I regret to hear you are still very deaf. I am sending some more drops & shall be pleased to syringe your ear again anytime after 9.30 a.m. on Saturday morning."

Sale of poisons

The sale of poisons in 1900 was still governed by the provisions of the Pharmacy Act of 1868, and there are a few letters on the subject: "I know of nothing better than Cyanide of Potassium for destroying wasps' nests. This being a scheduled poison, it would be necessary to have the poison book signed, and if you are known personally to a chemist in your neighbourhood, it would be simpler if you were to apply to him for it." Unhappily Mr Gulliver's advice was not taken and on September 8th., 1902 he writes, "I regret to hear the Bottle of Cyanide for destroying wasps was broken in transit, it must have received some very rough treatment, as we had taken extra precautions ... using a wooden box and sawdust instead of corrugated paper. ... I presume you at the time you received the broken parcel made the postman aware of its contents & should suggest it would be advisable to wash the mail again. The Parcel you have received would be disposed of best by burning it."

There are several letters referring to the dispensing of cocaine which was not restricted to medical prescriptions until 1916, but was at this time subject to Poison Book requirements. On December 8th., 1902 Mr Gulliver refused to supply a customer at White's Club with any further repeats of a prescription for 'Solution of Cocaine', and in June 1903 there is a letter to L.Vernon-Jones Esq.,M.D.: "I have never supplied Mr Oscar Corry with any Morphia. He has been repeating an old prescription for Solution of Cocaine, & some time ago I wrote him telling him I did not feel justified in dispensing it so often without the authority of his medical man."

On August 8th., 1903 Mr Gulliver wrote to another regular customer: "In view of certain developments & difficulties which have arisen with regard to the dispensing & sale of Cocaine ... I have been obliged to give instructions that the same are not to be supplied without a physician's prescription ... neither shall I be able to repeat the same indefinitely."

Morphia was the subject of a letter on November 18th., 1903 to Dr H.S.Desprez of Shoreham, Kent: "Dear Sir, I believe you ordered last evening 1 dozen Morphia Suppositories¼grain each for Mrs Maidment.... As you did not write a prescription for the same, I should feel obliged if you would let me have your authority, should she require them repeated at any future date ...."

Proprietaries and Wholesalers

Several letters refer to proprietary brands as for example, "Mr Gulliver ... is sending the 'Trional ' cachets according to ... prescription No.75800, each Cachet contains 20 grains of Trional." Or "...the box of Cachets sent, No.83030, are 'Sulphonal' cachets. The number of the prescription for 'Quinine Cachets' (5 grains in each) is 84301." "Mr Gulliver is sending per return 2 boxes of 'Dermatol Dusting Powder' in boxes with perforated lids." Somebody was suffering from a weight problem: "Mr Gulliver regrets ... he has neither the Vichy, nor the Kissingen Varalettes in stock, but that he has at once written for them to be sent per return post, with the Book on Obesity." Mr B.Kuhn of 36 St.Mary at Hill E.C. required both literature and by return post 1 oz 'Iodoformogen'.

He had occasionally to ask for help as when he wrote on Dec. 7th., 1901 to Messrs. Hopkin & Williams "Gentlemen, Do you know anything of 'Thiocol', it is the Potassium Salt of Ortho-Guiacol-Sulphonic Acid....?" He does not however seem to worry about 'dead' stock: "J.H.Philpot Esq.,M.D. ... the Pulvéol has arrived [from Paris] ... Messrs Wilcox Jozeau & Co. declined to hold any stock of it. I therefore ordered three bottles ... so shall be able to supply it at any future time when you may require it."

On October 3rd., 1903 he wrote to Messrs. Davy Hill & Son (sic) of Southwark: "... I find the pills of

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which I sent you a sample were supplied by you on July 4th., 1902. The experiments I made proved they did not conform to the requirements of the B.P. and for that reason I enquired ... what length of time you calculated they would keep up to B.P. standard as it is of course difficult to be constantly examining them ... I understand that several houses are now guaranteeing these pills to keep for two years .... My sale of these ready made pills is very small, but on the other hand we cannot always make them fresh.... Please forward at once 6 gross of gelatine coated ones that I may rely on."

On December 12th., 1903 Mr Gulliver replied to a letter from them: "I can assure you I have opened no new a/c, it is certainly extraordinary the a/c should be so small for Nov. last, but I have in no way changed my drug house. One thing I do notice [is] the sundry ... and a/c for chemicals increase, and the drug a/c gets less, thanks to German and American specialities, and branded goods generally; a matter which both you and I must much regret." [But a trend which was to increase.]

Among items ordered from Burroughs Wellcome & Co. during the four years covered by this book were, 'Hazeline', 'Kepler's Malt & Oil', 'Pepsencia', 'Panopepton', 'Oral Vinaigrettes of Sulphonal' and 'Tabloids', Laxative Vegetable, 'Forced March', Blaud Pill Comp., Guiacol & Quinine Comp. etc. As well as supplying a variety of now forgotten proprietaries, B.W. were prepared to make tablets to special formulae: "Will you please send us Tabloid Tincture Strophanthus min.2, made with the preparation of the 1885 B.P. as this is for an old prescription.", and on November 8th. 1899 he wrote, "As I still have occasion to use your old form of 'Tabloid Trinitrin Co.' could you please send 100. I append formula - Trinitrine 1/100 grain, Amyl Nitrite 1/4 grain, Capsicum 1/50 grain, Menthol 1/50 grain."

In 1902 there is a letter to Alfred Bishop Ltd., "Gentlemen, Now that you have discontinued making Gran.Eff.Sod.Phosph. would you kindly let me know if what you supplied to me (labelled 2 grains in the drachm) was calculated as dried Phosphate of Soda, or with water of crystallisation, so that I can make it of exactly the same strength."

The practical chemist of a century ago was not above selling cosmetics such as 'Blanche Leigh' soap from Paris, White Violet perfume, Papier Poudré, Calvert's Carbolic Toilet Soap, Creme Simon, mostly obtained from Sangers, as well as other less pharmaceutical goods. "3rd March 1904, to Moore's Non-Leakable Pen Co.", the cheque of Jan.12th., 1904 included all pens sold to date.

Sangers (John Sanger & Sons) seem to have been Mr Gulliver's principal wholesalers, but their invoicing caused him much trouble: "Nov. 24th., 1899 ... 1/6 doz. ½oz 'Pinol' invoiced at 1oz price"; Dec.11th,1899... no credit note for 1/12 doz. Douche Tin, ½lb Sal Mineralis, Claxton Ear Caps returned"; "Jan. 9th., 1900 ... Best Green Flint Dispensing Bottles 8 oz, 1/8 part ordered yesterday afternoon for delivery same day not yet arrived." "Jan. 12th. I have not yet had any Ice Bags from you..." ; "Feb.15th...no invoice for Ingram's Enema, no credit for 1/6 doz Puffs @ 11s., 1/12 doz Benzine Collas 6d."; "July 3rd. ... no credit for 1/12 doz. 4 oz. Eau de Cologne Gegenüber returned"; Jan 5th., 1901 ...3/12 doz. Sanitas Fluid @ 11s. 5d. charged 8s. 7d. this should be 2s. 10½d." ; "Jan 11.... Gentlemen, I find on Jan 10th. you have invoiced 1 Brain's Dog Biscuits, 1 Brain's Puppy Biscuits, only Puppy were sent, do not trouble to procure the Dog."

Mr Gulliver may however have appeared to Sangers to be at times a somewhat demanding customer: "Jan. 17th., 1900, Gentlemen, I append copy of order of Jan.12th., 1900: 1/12 doz. Roll Toilet paper as enclosed pamphlet. If you do not stock same please procure one roll ... and forward as soon as possible - I have heard nothing of the order since it was sent."

Corks came from Waide & Co. of Portsmouth, but were not always satisfactory: "May 1st., 1901 ... just to hand, you have sent them very large and not up to the usual quality. Cannot you do something better than these ?"

In November 1899 a customer was informed: "... the parcel of Toothbrushes is just to hand, & ready for you to select from.", and a few days later an order was sent to Mrs Adamson of Camden Square for half a dozen toothbrushes and half a dozen palate brushes, "ordered specially to pattern." Hand-made wire-drawn bone-handled bristle brushes like these still comprised the bulk of the toothbrush stock at Lower Belgrave Street forty years later.

Sponges were expensive and were obtained from Henry Marks & Son, Houndsditch:" Dec. 11th., 1901 ... please send me some Turkey Sponge of good quality & nice shapes, principally cups." Six each at 2s., 3s., 4s., 5s., 6s., and 7s. were ordered, and a week later: "I am sending you the piece of sponge of which I spoke when at your warehouse and if you can do anything to it to make it saleable I shall be much obliged, it is a good piece and a pity to sacrifice it for next to nothing." Three days later: "I have to thank you for your promptness in cleaning and restoring my soiled sponge; you have succeeded admirably ...." Half a century later shop-soiled sponges were still occasionally cleaned on the premises in a large stone sink in the basement.

In a pre-throwaway age repairs of all sorts were undertaken: "Mr Gulliver begs to acknowledge receipt of [the] note accompanying the brass Enema and he

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has at once given it to his surgical instrument maker to put in proper order", and on January 1st., 1901 there is a letter to Warrick Bros. about repairing a 'Suppository Machine'. Not all attempts at repair however were successful: "Messrs. W. Gulliver & Son ... have just received a communication from the manufacturers that the India Rubber Hot Water Bottle is irreparable."

Customers could not always be trusted to be careful with goods sent on approval: Lucy, Countess of Egmont, Inverness, N.B. .. Mr Gulliver ... is sending per return four anklets and instructions for measurement. ... He would feel obliged by those not wanted being returned at once & also that care be taken that they do not become soiled." There were some items which could not be returned: "Mr Gulliver begs to inform Mrs Ripley he has communicated with Dr Philpot, & he learns from him that he tried all the Catheters in use, in consequence they are not returnable."

Medicine chests and Labels

Travelling medicine chests and replacement bottles were still in demand: Oct.22nd., 1901, Sir J.W.Pease, Hutton Hall, Guisborough, Yorks., ... I regret I have not in stock a pot of the exact size you have given ... so am sending the same as you have had before; these being the nearest to your drawings." "April 7th., 1904, Lady St. Oswald, Nostell Priory ... Will you let me know ... the height of the bottles which go in row 2 from the front of your travelling case. I should like to know the height from the bottom to top of shoulder ...and also the total height to top of stopper ... also the depth of present division in row 2...." The bottles, obtained to measure, were despatched on May 12th., with apologies for delay.

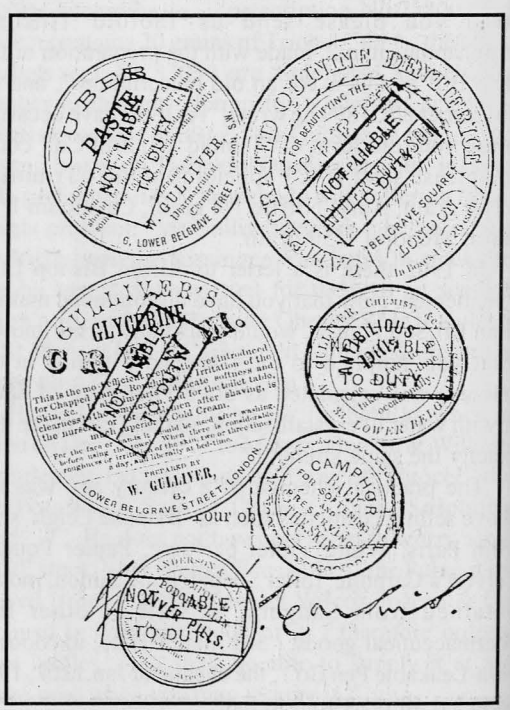
Capt. Ferguson was told on November 6th., 1899 that 'Quinine Tabloids' were too large to go into the bottle and that many of the 'Johnson's Digestives' would not either. In April 1904 Mr Gulliver informed the "Honble. Mrs Anstruther that not having a tin suitable for the granular preparation he has been obliged to put it in a bottle as usual. These are however made of strong glass and will not break readily. He would however like to draw attention to another bottle being cracked; he has thought it better to have a new one fitted in each instance."

About fifty years later an early 19th.century mahogany medicine chest was discovered in a Kensington antiques shop containing a hand balance with weights, a glass mortar and pestle, an ivory spatula, a glass measure, two empty pill bottles with metal caps and 23 stoppered bottles containing various powders and liquid medicines. Many of the stoppers still had leather caps tied on with pink string and all bore 'Gulliver' labels of about 1900, suggesting that they had been re-filled by Mr Gulliver at about that time.

Boxes for white demy, for powders and wrapping bottles, were made to measure and obtained from a Mr A.Barry of Highbury New Park. "Kindly make me ... 1 box only 17 in. x 17 in .x 5 in. strong and bound in cloth, 2 only 17 in. x 11 in. x 5 in. ... 15 only 10½ x 12 x 6½ ... these must be strong but need not be bound all over." In a later order for smaller boxes he adds: "Please make so that these papers will go inside and lie flat with a little play to allow room for fingers to get them out." 'Franks purple, pink in, flanged' pill boxes also came from Mr Barry.

James Wilkinson, Gutenberg Printing Works, Pendleton, Manchester, supplied labels: "Jan.13th., 1900 ... I do not like the sample of Green Paper, could you not do a brighter green, something nearer the "To be used with care" Label which I enclose." On Dec. 18th., 1901 Mr Wilkinson was in trouble: "You have also made a mistake in the Dill Seed Water Labels, it should be "Carefully Distilled from the Seeds"...."

In November 1899 Mr Gulliver bought a label printing machine and recommended it in a letter to his friend J.H.Mathews of Queen's Gardens. "... the name is 'Signerapparat' vom Pharmaceuten J. Pospisils. I think the price is 13s.9d. net, for which you have 3 sized letters & one set of numerals. I put my labels on with paste & when dry paint them over with Methylated



Small scale manufacturing in 19th century pharmacies

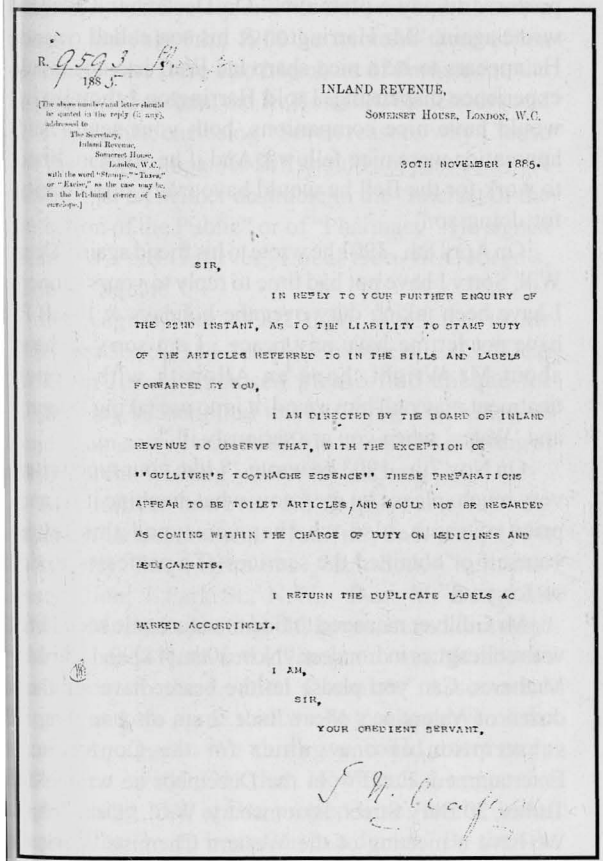
https://doi.org/10.24355/dbbs.084-201802161338

Collodion & when this is dry, paint them over with a good paper Varnish and if you allow the varnish to extend over the edge of the label I find you can wash them repeatedly without showing any signs of peeling off." Writing to a colleague in Chester he says, "Ask Rose to show you the bottle of perfume I sent her and note the label. I have an apparatus for doing them ...I have re-labelled all the bottles on the dispensing counter as well."

On September 6th., 1902 Mr Gulliver wrote to his Swiss colleague, M.J.Brun: "Mon cher ami ... I should suggest you have a mahogany & brass pill machine with marble slab to make 30 pills of 2 grains each and another for 5 grains .... We have had a very disappointing year both in business and socially, but we are all glad to have the Coronation over, war too...." By September 12th., he had received and despatched an order to M.Brun in Geneva for three pill machines for 3, 5 and 1 grain pills at £1.13s.0d., £1.16s. 0d. and £1.7s.0d. respectively - less 5%.

Mr Gulliver made his own distilled water, and in October 1900 he wrote to Messrs. Bennett, Sons & Shears for "a Cribb's Condenser, large enough for my big still.... My worm tub is now worn out ...." A few weeks later he explained, "Finding it impossible to get the required angle of union into [the] condenser from [the] present one I have adopted the following means: I have cut off the union and cleaned off all the solder, & then fixed it on [the]head tight[ly] and set in exact position, set a piece of wood against the end & by means of [a] plumb line got exactly perpendicular & cut [an] inclined card from that. Trusting this will be clear to you ...."

Troubles however were in store for him. He wrote on Oct. 29th., 1902, "I have had some little difficulty with regard to 'automatic supply' since the heating tubes have been fitted, at times the pressure seems to prevent the cold water running in from [the] supply cistern" Over fifty years later a new still for distilled water was installed in the same pharmacy, and there was the same trouble overcoming fluctuating water supply, but there was even more trouble from an excise inspector who was convinced we were operating an illicit distillery.



R. 9593 H. 1885.

[The above number and letter should be quoted in the reply (if any) addressed to The Secretary, Inland Revenue, Somerset House, London, W.C., with the word "Stamps," "Taxes," or "Excise," as the case may be, in the left-hand corner of the envelope.]

INLAND REVENUE,

SOMERSET HOUSE, LONDON, W.C.

30TH NOVEMBER 1885.

SIR,

IN REPLY TO YOUR FURTHER ENQUIRY OF THE 22ND INSTANT, AS TO THE LIABILITY TO STAMP DUTY OF THE ARTICLES REFERRED TO IN THE BILLS AND LABELS FORWARDED BY YOU,

I AM DIRECTED BY THE BOARD OF INLAND REVENUE TO OBSERVE THAT, WITH THE EXCEPTION OF "GULLIVER'S TOOTHACHE ESSENCE" THESE PREPARATIONS APPEAR TO BE TOILET ARTICLES, AND WOULD NOT BE REGARDED AS COMING WITHIN THE CHARGE OF DUTY ON MEDICINES AND MEDICAMENTS.

I RETURN THE DUPLICATE LABELS AS MARKED ACCORDINGLY.

I AM,

SIR,

YOUR OBEDIENT SERVANT,

Note use of upper case type only, on this 1885 typewriter

Stamp Duty and Insurance problems

Medicine stamp duty gave rise to some correspondence: "15th. February 1903, The Secretary, Inland Revenue, Somerset House, W.C., Dear Sir, In reply to your communication of Feb 17th., 1903, (No.21851S) re Sale of Gulliver's Aromatic Pick-me-up, we beg to inform you that we hold the duplicate label marked by your authorities "not liable to stamp duty", with exactly the same wording as the one you have purchased." On 10th. March he informed the Inland Revenue that the label stamped "not liable ...." had been received from them on 16th. December 1885. On 19th March he acknowledged their letter of 18th. March in which, "the Board are now of the opinion that the preparation is rendered liable ... by the claim to a proprietary right therein set up by the use of the name in the possessive case" and asks for their official opinion if a suggested "altered wording would not render the preparation so liable."

In a letter to his insurance agent, Mr Gulliver informed him: "I am having the Electric Light installed in certain rooms on the above premises & should be glad to know if my policies will be thereby affected?" Four months later there is a letter to the Liverpool & London & Globe Insurance Co.: " I have just added four more electric lights to my Pharmacy & one in the front hall ... I presume the same will be allowed under my present policy ...."

Mineral water and oxygen supply

There was a considerable trade in mineral waters: "Sir Evrard H.Doyle, Bart., 7 Grosvenor Gardens.... Empty Seltzer bottles are allowed for at the rate of 1s. per doz., this reduces the cost to 2s. per doz.nett for the water."

https://doi.org/10.24355/dbbs.084-201802161338

The well known firm of Idris & Co. was not performing too well: "Kindly note state of contents of this syphon. I have had many like it lately. I have also had great complaints that many will not draw....", but there was no doubt Mr Gulliver could be demanding. Late Saturday night, July 14th., 1900 he wrote to Idris & Co: "... must request the following be sent on Monday early, 6 doz. Syphons Soda, 3 doz. do. Seltzer, 1 doz. do. Potash (silvd. syphons not labelled), 4 doz. Corked Soda large ... about a gross of silvd. syphons to return."

On occasions he could be irritable as when he wrote on July 21st., 1900 to Ingram & Royle Ltd., replying to an excuse for late delivery of Malvern Water: "Your van could not be so full that there was not room for 6 bottles ...." What seems to have been a special order was sent to Messrs.G.W.Scott, 144 Charing Cross Road, for "2 baskets each to carry six syphons. I find outside measurement of a syphon is just 4 inches so that the inside of each division should be at least 4½ ins. x 4½ ins. to allow of their being put in easily without damaging the labels."

There are several letters in the book about supplies of oxygen. On February 14th., 1900 Mr Gulliver wrote to J.Hall Esq., The General Infirmary, Northampton: "I beg to enclose statement showing a balance in your favour of £2.10s.4d. to be worked out in Oxygen. Your secretary wrote me saying you had no use for so large an amount, agreeing to pay the carriage on same both ways until the amount was worked out, it being of course cheaper to do so as the cylinders would soon have come to that sum. Any time you are requiring it I will give the same my prompt attention. Kindly state whether it is to be sent 'per passenger' or 'luggage train' when ordering, and whether fittings are required."

"Feb.15th.; 1900, A. Mitchison Esq., 7 Eaton Place ... I am this afternoon in receipt of two cylinders and 'nipple and union' but the key to turn the tap is missing ... value of key is 1s.6d. ..." Sometimes it was necessary to give exact directions for use: "July 3rd., 1901, Mrs K.Barchard, Uckfield, Sussex. ...the brass nozzle must first be screwed on to the cylinder & then the rubber tube with glass mouth-piece attached, is to be put on the end of the nozzle, the tap can be gently turned by means of key sent until a gentle stream passes; the end of the glass tube may then be slowly rotated in front of the mouth and nose of the patient, & if sleepless probably help to give better nights & act as a general tonic ...."

"Jan. 11th., 1904 ... Mr Gulliver begs to inform Miss Twiss he has seen the Brin Oxygen Co. with regard to the cylinder complained of, and they assure him that every cylinder is carefully tested ... to ensure its being full, and it is also tested with a little water to make sure there is no leakage ... they can only account for any leakage by the tap not having been perfectly shut off". Miss Twiss was not however satisfied with this explanation as Mr Gulliver wrote to her again two days later. "Mr Gulliver thinks Miss Twiss must have quite misunderstood. The explanation is that of the Brin Oxygen Co. to Mr Gulliver, and not one of his own. Miss Twiss must please bear in mind he does not fill the cylinders himself but sends them out exactly as they are received."

Social life

A number of the letters are to relatives and friends, including ten to a colleague, W.H.J.Shepheard of Bridge Street Row, Chester. On October 9th., 1900 Mr Gulliver mentions problems with his 'big still' and adds: "I have had an estimate for one of Cribb's in copper, they are expensive, £10.0s.0d., but ... I think I shall have one. I believe I should burn much less gas. ...Business is very quiet, more so than usual, probably due in large measure to the General Election."

"Dec. 13th., 1900, Dear Will, At a Committee of the Western Chemists ... Mr Harrington our late President ... asked if any of us wanted an apprentice ... he has a son. a tall gentlemanly fellow.... I do not know if he is prepared to pay a premium." On December 18th., he wrote again, "Mr Harrington & his son called on me. He appears to be a nice sharp lad [but] has not much experience dispensing. I told Harrington I thought he would have nice companions, both your senior and apprentice were nice fellows. And if he were inclined to work for the Bell he would have every opportunity for doing so."

On April 8th., 1901 he wrote to his friend again."Dear Will, Sorry I have not had time to reply to yours sooner. I have been taking duty over the holidays & the B.P. have not let me have any peace....I am sorry to hear about Mr Wright, hope an Allopath with proper treatment may pull him round, it is no use taking 'Sugar' and 'Water' when you are seriously ill."

On Nov.7th., 1903 he wrote, "I like your typewriter very much, please let me know what machine it is, and price of same, also whether you typed this letter yourself or obtained the services of a professor to do so for you."

Mr Gulliver managed to find time for some social life with colleagues in London: "Nov. 30th.,[18]99, Dear Mr Mathews, Can you please let the bearer have another dozen of Valentine's Meat Juice. I am also sending a subscription of one guinea for the Conference Entertainment Fund." In the December he wrote Mr Turner, 20 Bury Street, Bloomsbury, W.C., "Dear John, We have a meeting of the Western Chemists Assocn. on Wednesday next .... The subscription is 2s.6d. per annum & we have also an Entertainment Fund to which

https://doi.org/10.24355/dbbs.084-201802161338

we nearly all subscribe another 2s.6d. to pay the expense of Smoking Concerts etc."

"Nov.5th., 1900, Mr R.A.Robinson Jun., [Later to become President of the Pharmaceutical Society] 17 Bloomsbury Square, Dear Sir, I enclose 1s.6d. in stamps for ticket for 'Smoking Concert' ...." "June 22nd., 1901, R.Brembridge Esq., 17 Bloomsbury Square. Enclosed you will find cheque for 9s. in discharge of my liability as a steward for the 'Annual Dinner'...." In April of the following year he wrote to him again, "Enclosed please find P.O. value 5s. in payment of my subscription to Pharmacy Club. I hear there is to be a dinner on Wednesday next ... and should like to have attended the first after my election, but shall be prevented as I am on that evening in the chair at the Western Chemists."

Mr Gulliver did not forget old friends. On Oct. 16th., 1902 he wrote to E.N.Butt Esqre., "If your votes for the Benevolent Fund are not already promised, may I ask your support for Mr A.C.Trotman He was a very old friend of my Father, & a former manager of Messrs. Savory & Moore's Branch in Chapel St. ..."

These were the years of intense political warfare between the Company Chemists and the Pharmaceutical Society, and Mr Gulliver took an active interest. On July 9th., 1900 he wrote to three of his customers who were also Members of Parliament, the Rt.Hon.G.J.Goschen, the Rt.Hon.E.R.Wodehouse and H.J.Anstruther, enclosing "Seven reasons why Clause 2 of the New Companies Bill should not pass as it now stands ... [it is] neither desirable in the "interest of the protection of the Public" or of "Pharmacy". He signed these "W.Fred.Gulliver, Local Sec. St.George's, Hanover Square."

On August 18th., 1902 there is a letter to Mr W.S.Glyn-Jones, 184 Temple Chambers, E.C.: "Dear Mr Glyn-Jones, Enclosed please find cheque for 10s.6d., my subscription to your Drug Trade Appeal Fund. I am sorry I was unable to attend the meeting at the Holborn. Wishing you every success ...."

Mr Gulliver however did not favour a fawning approach to Government: "Jan.7th., 2nd. post, 1904, R.B.Betty Esq., Hon.sec., London Chemists' Association, 1 Park St., N.W., Dear Mr Betty, Mr Bowen, Mr Blake and myself, have met and discussed your proposed letter and invitation to our Member of Parliament to the London Chemists' Association Dinner, and we agree that we do not approve of the step you suggest. We think we could exert more influence with Col.the Honble.H.Legge, by approaching him at the proper time, in the usual manner, than by an invitation to a dinner." By the 4th. post on the same day Mr Gulliver resigned from the General Purposes Committee of the Association and returned the tickets for the dinner.

Assistance in the pharmacy

On April 8th., 1902 Mr Gulliver wrote to Pitman's School, Southampton Row: "I am in need of a young lady clerk to keep my books....I have not enough work to employ her entirely but a friend of mine, also a chemist, would I think be willing to fill the remainder. We should not want an experienced shorthand writer & typist but one writing a good hand." This apparently produced no results, and on April 22nd. there are replies to two advertisements, one from 'K.E. of Cadogan Square, and one from 'M.P.' c/o Bolton's Library, Knightsbridge: "Messrs. W.Gulliver & Son have a vacancy for a young lady as book-keeper and would be glad if [she]would write to him as to salary, experience, and where obtained."

Two days later he wrote, "If Miss Tarrant is still disengaged Mr Gulliver would be glad to have an interview ... any hour would be convenient ...." The next day he wrote Mr Mathews of Queen's Gardens: "Miss Tarrant ... is willing to undertake the work for 10s. a week each. Her father is a coachman in Lowndes Square. She seems to be very respectable and prefers to get something which is likely to be a permanent engagement, rather than going into a City office."

In 1903 he was looking for a dispensing assistant: "Aug.17th., 1903, Mr G.E.Willoughby, Pool, Carn Brea, Cornwall, Dear Sir, I am in receipt of your letter of the 15th., and should like to know where you served your apprenticeship, and where you have gained your experience since, also what salary you require. This is a first class dispensing business where you will get some good experience. Your duties would be to make preparations, keep up stock and assist with dispensing...."

On August 19th. in reply to a further letter from Mr Willoughby he told him, "We open at 8 a.m. and close at 8 p.m., two nights in the week you can leave as soon as the work is clear, and one evening you are free after 5 p.m., you are also free every other Sunday. £60 per annum is rather more than I have been in the habit of beginning with, especially as you have only had six years experience & none obtained in London ... willing to begin with £50 ...."

Mr Gulliver had occasional need of fully qualified help for holidays and also when he was called on as an examiner for the Pharmaceutical Society: "April 2nd., 1904, Dear Dixon [of Maw, Son & Sons] I am in want of a man for the April Exams, can you help me ? I have written to Toplis but he is not available. I begin on Saturday the 9th. & the following dates 11th, 12th. 13th, & 18th & probably five following days."

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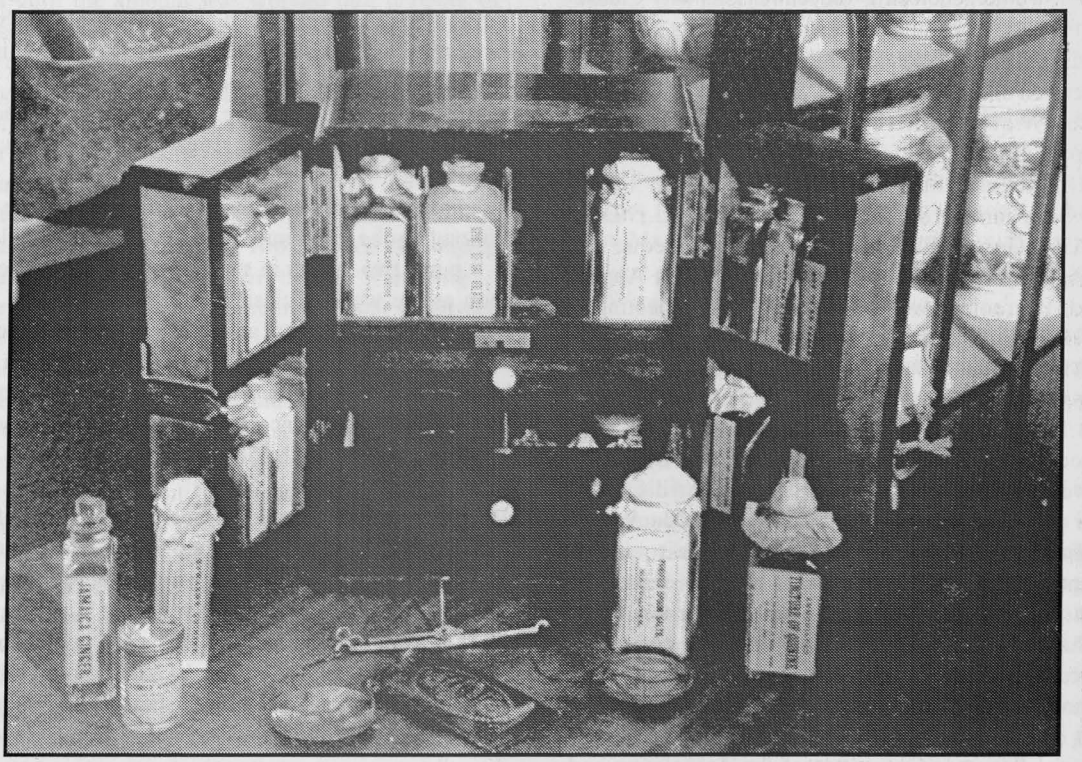
Three of Mr.Gulliver's 19th century German chemicals

Veterinary products

The correspondence in the letter book suggests, perhaps surprisingly since all local transport was horse-drawn, that there was very little demand in Belgravia for animal medicines. On February 23rd., 1900 there is a letter to Mr M.Musgrove of Wandsworth: "... Liquid Dog Soap arrived broken, have refused same." A replacement was sent immediately, but on the 24th. he wrote "Having some suspicion of the second bottle when it arrived, I requested the postman to open the Parcel and found this was also broken ... it is time something was done in this matter. How would it be to try per Carter Paterson ?" Then at last on February 27th. "... bottle of Fluid Dog Soap safely to hand this morning. Please send on at once another Bottle, stamps enclosed for 1s. 0½d."

There was however a customer in Italy for veterinary items. M.le Baron Raimondo Franchetti of Canedole di Mantova, posted an order on November 2nd., 1899 for six bottles of Blistering Liquid for horses; this was received and the goods despatched on November 6th., and on December 5th., Mr Gulliver received another order, posted on December 1st., for two "Vases of Raspberry-Conserve" and two each of Apricot and Gooseberry. He replied, "I conclude you mean what we call 'Bottled Fruits' as supplied on September 28th., 1893. It has also occurred to me you might mean what we call here 'jam' or 'preserve' " By December 13th., the language difficulty had been sorted out and a parcel was sent containing bottles of preserved fruits, packets of tea and boxes of biscuits.

In April 1900 Mr Gulliver sent to various engineering firms for catalogues of "Steam Engines suitable for Agricultural purposes, driving thrashing machines in particular ... to forward to a client abroad." He also wrote to his brother, Tom Gulliver of Holdenby,



19th century medicine chest, refilled by Mr. Gulliver c. 1900

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Northampton, asking which firm he would recommend, explaining that he was acting as 'general commercial agent for English goods' for the Baron. After forwarding the parcel of catalogues to Italy, he wrote again on April 14th. recommending Marshalls of Gainsborough, and Clayton & Shuttleworth of Lincoln, but was careful to add, "I should esteem it a favour if you would place your order in my hands, and I will see the matter receives proper attention."

On April 16th. Mr Gulliver sent detailed instructions for the use of the blistering liquid, but there are no further letters until November 12th., 1902 when "We regret the little delay [over sending 56 lbs. of Colman's Veterinary Mustard] but this has been owing to the Italian Consulate making new rules". On the same day there is a letter to the Italian Consulate: "... on Nov.6th. I forwarded to you a Certificate of Origin for goods to Baron Franchetti, and I did enclose an additional stamped envelope for reply, also 6d. in stamps (as I have always done in the past), and as you yesterday charged 2s.6d. for Certficate of Origin, I should feel obliged by you returning the 6d. in stamps". The last letter to the Baron is dated March 16th., 1904: "... this day forwarded the 2 doz. pots of Carb and Split Ointment by Grande Vitesse ...."

Nearly all the letters in the book are in Walter Frederick Gulliver's copper-plate handwriting, except for a couple in 1902 and some sixty in 1903-4, perhaps written by Miss Tarrant. After closing this book did he turn to the typewriter in which he had shown such interest? Certainly when he sold the business to my father, Stanley Vincent Roberts, he left behind a massive typewriter which had no shift key, but separate banks of keys for upper and lower case letters.

After retiring from retail pharmacy at the age of sixty, Mr Gulliver joined the staff of the London College of Pharmacy and eventually succeeded C.W.Gosling, a former assistant at Lower Belgrave Street, as principal. Following Mr Gulliver's death on January 27th., 1936 the *Pharmaceutical Journal* published the following tribute in a letter from Mr. Gosling:

The Late Mr. W.F.Gulliver

Your notice in The Journal of February 1, p. 131, whilst outlining Mr.W.F.Gulliver's career, fails to describe either the man or the pharmacist as the writer, who new him so intimately, would like to see his personality recorded. Gulliver was not only a scholar, he was also the greatest practising pharmacist I ever met, and above all, a thorough gentleman. It was his continental experience and knowledge of French (also a little German) that made him widely versed. He ran his pharmacy on ideal lines. The business consisted of dispensing and the supply of sick-room requisites. Nearly all galenicals were prepared and standardised on the premises. His friend Farr, of Uckfield, used to send him dry digitalis leaves he had collected; Gulliver ground these and kept them in small sealed containers to use for making small batches of tincture at frequent intervals, rejecting the old stock. Spt. Ammon. Co., Spt. Æther. Nit. and Conf. Sennæ are examples of other galenicals made regularly in his pharmacy. Gulliver was known to a number of Swiss and French practising pharmacists, and usually had a recently qualified foreign pharmacist as a pupil "to learn English pharmacy." These men were never paid, but considered it a privilege to be there. As an examiner Gulliver was sympathetic and conscientious. He used to remark that the question before him always was "Is this candidate fit to dispense in my pharmacy?" After working in Mr. Gulliver's pharmacy for three years, I was appointed lecturer in pharmacy at London College, and I often felt that he was more successful than some of the examiners in passing the good students and failing the poor ones. His contribution to the Codex was twofold - his great knowledge of continental pharmacy, its practice and literature, and his experimental ability. Under Gulliver's direction, the writer made scores of samples of one preparation, with slight variations of formula and technique, in order to find the best method and the right components in their proper proportion. As a teacher Gulliver was remarkably successful, and hundreds of "Old Cyanides" will regret his passing. They revered him. Gulliver knew and loved the Society in the days of Michael Carteighe and Bemridge. He accepted as inevitable, but did not take kindly at first, to the new regime as represented by Glyn-Jones. He remained a very loyal supporter of the Society, however, in every issue that came up. Pharmacy and many pharmacists have lost a most loveable friend - a man who upheld the best traditions of his craft.

C.W.GOSLING

London. S.W.8.February 9, 1936

The Editor

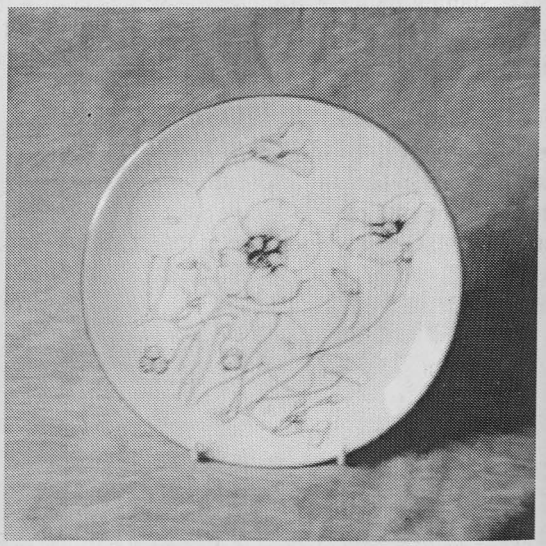
Owing to an ever-increasing desire to research further into pharmaceutical history, the Editor has decided that she must resign. Happily a fine replacement is waiting in the wings in the person of Ainley Wade of Martindale fame. We are also setting up an Editorial Panel which will read through the papers offered to the *Pharmaceutical Historian*, and I can assure you we have some excellent ones just waiting to see the light of day!

https://doi.org/10.24355/dbbs.084-201802161338

Dr. John Cule giving his lecture at Cardiff BPC

Wilma Macdonald at Edinburgh receiving her Millennium Plate as a gift from BSHP

The new Millennium mug which is now available



The plate which BSHP has produced to celebrate the arrival of the new Millennium

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Liverpool School of Pharmacy in 1916 on which is the Editor's Father, Gwilym Lloyd Thomas

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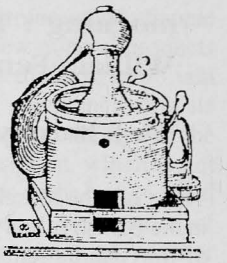
PHARMACEUTICAL HISTORIAN



The Journal of The British Society for the History of Pharmacy
Editor: Ainley Wade, B.Pharm., M.Phil., FRPharmS.
840 Melton Road, Thurmaston, LEICESTER. LE4 8BN

Contents

New Address

Members of the BSHP will have already received notification of the change of address from the RPSGB office in Edinburgh. Association Enterprises in Leicester will be undertaking much of the administration in place of the Royal Pharmaceutical Society. All enquiries concerning membership, subscriptions or the society's activities should now be addressed to:

British Society for the History of Pharmacy
840 Melton Road
Thurmaston
Leicester LE4 8BN

Telephone: 0116 264 0083
Fax: 0116 264 0141
E-mail: bshp@c-sense.org

Diary Dates

May-June-July 2000
London String of Pearls Millennium Festival. The Museum at 1 Lambeth High Street will be giving free guided tours at 2.30 p.m. on Tuesdays and Thursdays during the three months with no pre-booking required.

Saturday 3 June 2000
Pharmacy History Day. An event throwing the Museum open to the public with talks, demonstrations and experts on hand to discuss pharmacy antiques.

10-14 September 2000
British Pharmaceutical Conference at Birmingham Conference Centre - Tuesday 12 September History session 2.30pm.

Saturday 23 September 2000
London Open House Weekend Architectural tours of the RPSGB's HQ building.

Wednesday 15 November 2000
'Recent acquisitions at the Wellcome Institute' by Dr. Richard Aspin, at 1 Lambeth High Street

Wednesday 14 February 2001
'A history of dentistry' by Professor Stanley Gelbier

Wednesday 14 March 2001
'Swamps, slaves and suspicions' by Mr Robin Price

Wednesday 16 May 2001
'Pharmacy and complementary medicine: a historian's perspective on where we are going' by Dr John Crellin

Professor Harkishan Singh, the author of a paper on p.26 of this issue, has had the Eminent Pharmacist Award for 1999 bestowed on him by the Indian Pharmaceutical Association. Professor Singh has been a teacher and researcher in medicinal chemistry for four decades, a noted participant in the development of pharmaceutical education in India and a pharmaceutical historian.

New Website

The Society's website is now available on the internet at **www.bshp.org** and it is hoped that it will be further developed in future. Further details of the use of the internet for the history of pharmacy can be found in Christiane Staiger's article on p.25. Even if you don't have access to your own computer you may have an Internet Café or your local public library should be able to help you get started. The honorary secretary may be contacted through the website and Instructions to Authors may also be found there.

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"I am a Good Deal out of order this morning": Letters to Apothecary William Fentham of Nottingham

Dr J. Burnby and Prof. D.L. Cowen

There is in the Moseley and Rolleston Correspondence in the British Library (Mss. ADD 34769) a collection of thirty-three letters addressed to the Nottingham apothecary William Fentham, of whom all that is known is that his shop was located at Bridlesmith Gate and that on 1 November 1740 he took Wharton Partridge on as an apprentice.[1] The letters provide an excellent first-hand account of the practice of the 18th century provincial apothecary. They perhaps reveal nothing not already known, but they document specifically what the apothecary did and what he was expected to do.

The earliest date on the letters is 29 January 1739, the last, 26 May 1740. Except for one, which will later be noted, all the letters were from patients. Over half of the letters were written by the patient for himself or herself. In the other letters the writer indicated that the patient was wife, sister, daughter, cousin, maid, named females whose relationship was not given, and a 'poor woman' and a 'poor man'. Only seven places of origin were distinguishable, all in the Nottingham area: Arnold, Calverton, Colston Basset, East Bridgford, Nuthall, Oxton, and Wilford. Fentham's practice thus extended within a radius of ten miles [16 km].

One is immediately struck by the names of some of Fentham's patients: Chaworth, Sherbrooke, White, Clifton, Sedley and Sacheverell-all names of wealthy, land-holding county families.[2] The letters thus contradict the notion that people of position consulted physicians and not apothecaries[3]; Fentham's clientele were not all 'ordinary folk'.

The dominant characteristics of the practice of the provincial apothecary are manifest in these letters: he was a practitioner both of medicine and of pharmacy. The theme that runs consistently through these letters is that his patrons are asking for and receiving medical advice. The letters usually begin with a litany of symptoms from which Fentham was expected to diagnose, prescribe, and dispense. Almost all of the letters came from patients who had already been prescribed for and who were requesting either what we would today call a refill/repeat or further advice or both. Typical was the letter from one Richardson of Wilford:

> My wife's pot of Electuary is done. Her Gripes are not so violent by much but her Distemper flies about sometimes in her head, and then into her Knee and arises a Lump as big as a Pigeon's Egg, & then immediately in her Eye, so to her Stomach, and goes off in a Stool—by this I hope You may judge, whether to continue y^{e} Electuary or what else?

The letters were not demanding: like the last sentence of this letter they appealed for a judgement by Fentham. "If you think sweating or a blister necessary, do let me know", wrote E. Woods about his (her?) maid. "May I take Guaiac at night when I drink Ass's milk in the morning?" asked T.W. "What think you of taking a little Blood, she [his wife] is in very low spirits" wrote J. Chadwick from Arnold. "However," he continued, "send w^{t} you think proper wth directions. She begs she may have some w^{t} to compose her to rest". (In an intriguing postscript Mr.Chadwick asked the apothecary to "Pray send me anything diverting these long Evenings".) "What you think proper" or a similar phrase occurs often: obviously apothecary Fentham was a man to be respected.

In only a few of the letters were there *de novo* requests. For example, G. Bettison, complaining of an ague, wrote, "I should be glad to know w^{h} will be proper for me to take to purge my Blood of those Humors w^{h} render me so Susceptible to this Disorder." And Sherbrooke wrote:

> I haveing the misfortune to rench my Leg, i layed plaister one it which i have found benefit by such occasions it being trublesome to me I pulled and found under it a humor which is very Red and sore but not hot nor the skin of[f] I must beg your sending me what you thinke moste proper to do it but nothing that will take of[f] the Skin for I dred nothing somuch as a sore pray send with it half an ounce of Rhubarb I am in haste.

Several of the letters did not indicate a location; obviously they were patrons known to Fentham, who probably responded to such requests by messenger. Nine of the letters specifically directed that the requested medication be returned by the bearer of the letter.

One other facet of this correspondence that indicates that the provincial apothecary was a general practitioner of medicine—and demonstrated the wisdom of the House of Lords in the Rose Case—was the number of times Fentham was asked to visit a patient at home. Woods, in a letter dated "Sat: morn nine a clock" wrote:

> I should be obliged if you could come over immediately because I want to speak with you about particular business & my cousins cold is also bad, and she would be glad to be blooded & chuses y^{r} operation to be performed in the morning no later than the afternoon. So I hope you may come hither directly.

Again, in probably a later letter, Woods asked the apothecary "if you would return with the bearer and stay all night with us for we think Martha much worse than she was two hours ago". (The letter went on to describe Martha's frightening symptoms.) E. Higgins, writing at 2 o'clock told "Mr Fantom" that his sister is "all most rackt to Death with pain in her Bowels" and desired that the apothecary "would be soo good to come as soon as possible and bring

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something to give her Eas". And M. Pugh, writing from Calverton, asked Fentham if he could "conveniently pray come over this Evening to see a poor Man that has a very large Family here, and I will pay you". With much greater urgency Charles Chaworth asked Fentham to "Pray come imediately", a request probably complied with, for the letters indicate that the Chaworth family were Fentham's regular and frequent patients.

Three letters touch on the relationship between the apothecary and the physician, other than that implicit in the written prescription. One patient (who could not be identified) wrote that she has sent for Dr Bowers[4] to meet with Fentham, presumably in consultation, the next day. The physician could not come, but "says if you'll write him my Case, he'll give his Judgement in the best manner he is capable". "If you think this will be of any Service", the patient continued, "I beg you'll come here to do it". A second letter, clearly written under considerable stress, asked Fentham to "pray go emediately to Doctr Dodesley[5]....When yo [sic] have heard what Mr Dodesley saith, if yo thinks it more safe to have Doctor...see her pray bring him along with yo emediately".

The third letter, the only one of the group that did not come directly from a patient, was from a London physician to an unnamed man who was apparently Fentham's patient. The physician reported that he had conferred with Fentham as best he could considering the distance and was sending three prescriptions to be filled. The patient of course turned the letter and prescriptions over to the apothecary.

Fentham's practice as a pharmacist is demonstrated in several ways. In the first place, the letters mention only three simples - the bark, guaiac, and rhubarb - but he was dispensing bitters, blisters, boluses, clysters, decoctions, draughts, drops, electuaries, pills, plasters, powders, and tinctures. He was also dispensing over the counter at the request of his clients. Two asked for the bark; one asked for a pint of ammoniacum milk; another asked for half an ounce of rhubarb.

Finally, his pharmaceutical practice included the dispensing of prescriptions. These might come from a 'friend', as George Geary labelled himself in a request that Fentham make it up "with Your own hands", "two Ounce of Manna, one Ounce of Glober Salts and Casia powdered one quarter of an Ounce". They came also from physicians. Mary Chaworth, told him that she had seen a Doctor Faroro (?)[6] - a bit apologetically noting that she had had to do so on the insistence of a Lady (whose name is illegible) - and that the doctor "would leave a Direction [prescription] with you". The three prescriptions in the letter from the London physician mentioned above, were written entirely in Latin, including the detailed directions, and required compounding skill and a rather wide stock of materia medica. Among the ingredients that were written for was the famous Confectio Raleighana[7] a polypharmaceutical of some forty roots, seeds, and herbs, a few mineral products and a variety of animal products the most important of which was the flesh of the viper, including its heart and liver. It and guaiac made up the first of the prescriptions. The second prescription, which is not quite clear, directed that two drops of the best purified mercury be very well dispersed in eight grains of Venice turpentine and in four grains of another ingredient (the page is torn).[8] The mercury in turpentine suggests what was known as Neapolitan ointment,[9] which, like guaiac in the first prescription, was a noted anti-syphilitic. The third prescription called for a liniment of liquid opodeldoc (saponaceous balsam), prepared sal ammoniac without lime, and tinctura thebaica (laudanum). One can almost sense in these prescriptions the pretensions of a London physician dealing with a provincial apothecary.

Apothecary Fentham was indeed a successful practitioner if we can judge by the fact that there is little dissatisfaction noted in the letters and what there was was all politely expressed. "It did not purg me", wrote Ann Sacheverell. It purged his daughter "but twice", reported A. Clifton. And Catherine Porter wanted something "a little stronger...but a little softer than before". Perhaps more characteristic were E. Wood's request for Fentham's 'infallible plaister,' one Sedley's report that "I am much better", and Mary Chaworth's report that the drops "realy done me good".

End Notes

1. *See* P.J. and R.V. Wallis (with the assistance of J.G.L. Burnby and T.D.Whittet), *Eighteenth Century Medics* edn 2 (Newcastle on Tyne, 1988) p.197 and Adrian Henstock (ed.), *The Diary of Abigail Gawthern of Nottingham 1751-1810* (Nottingham, 1980). Partridge practised as an apothecary in Nottingham until his death in 1808. Abigail Gawthern wrote that he "made up all his drugs himself, being extremely particular in the choice and goodness of them".
2. The Chaworths were friends/enemies of the Byrons; there was a Lord Chaworth and Mary Chaworth, later Mrs. Musters, at Colwick House. The Sherbrookes lived at Oxton Hall. The Whites were 'Lords of the Manor' at Tuxford, although the letter was written from Wollaton, a house which is now a museum belonging to the city of Nottingham. The Sacheverells were a well-known family in Derbyshire and Nottinghamshire.
3. *See, for example,* R. Franklin, *Medical Education amd the Rise of the General Practitioner* (Ph.D. thesis, University of Birmingham, 1950); I. Waddington, *The Medical Profession in the Industrial Revolution* (Dublin, 1984) p.169; S. Lawrence, Creating medical gentlemen in 18th century London. In *The History of Medical Education in Britain* V. Nutton and R.Porter (eds), (Rodopi, Amsterdam-Atlanta, GA, 1995) p. 200; and Geoffrey Holmes, *Augustan England: Professions, State and Society 1680-1730* (London and Boston, 1982) pp.173, 206.
4. The nearest Dr Bowers we could find was at Doncaster, some 35 miles [56 km] away.
5. Probably Cambridge and Leyden trained Alverius Dodsley. *See* Innes Smith, *English -Speaking Students of Medicine at the University of Leyden* (Edinburgh, 1932) p.69.
6. There was a Daniel Farros, M.D. in the area.

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7. *See* A.C.Wooton, *Chronicles of Pharmacy* (London, 1910) Vol. 1, pp.310 ff.

8. We are grateful to Dr Glenn Sonnedecker of Madison, Wisconsin, Christiane Staiger of Eschborn, Germany, Prof. Ottilia De Marco of Bari, Italy, and Dr John Crellin, of St. John's, Newfoundland, who, through the medium of the Internet, sought to clarify this item for us.

9. *See* Georg Urdang, *Zur Geschichte der Metalle in den amtlichen deutschen Arzneibüchern* (Mittenwald, n.d.) p.82. We are grateful to Dr Glenn Sonnedecker for calling this to our attention.

The Relationship between Polish and Scottish Pharmacies

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Poland and Scotland are far from each other, but in the course of history they were connected many times and this was not due to politicians but rather to ordinary people. Among the connections between Poland and Scotland, those pertaining to pharmacy are relatively little known. Their origin is of a very complex character. Social turmoil and unrest in Scotland in the 16th and 17th centuries for religious reasons induced many Scottish citizens to migrate to Poland, which was then a country open to followers of the Reformation. They were welcomed, as they were mostly wealthy and well educated people who contributed to the economic development of Polish towns.

To-day it is not easy to determine exactly the number of Scottish newcomers. Most of them assimilated very quickly and a century later the only sign of their origin was the annotation *Scottus* after their names on old civic deeds drawn up in Latin to register foreigners coming to stay in Poland - for example the *Album Civitatis Poznaniensis.* There were physicians among them (e.g. a physician of Gdansk living in the 17th century, Teofil Scotus, or a well known physician and botanist, born in Poland and coming from a Scottish family in Szamotuly, Jan Jonston [1603-1675], whose numerous works were translated into English and published in London in the author's lifetime,e.g. *An history of the wonderful things of nature...,* London, John Streater 1657), as well as pharmacists (e.g. Joannes Pappet or Puppet living in the 16th century in Poznan).

One of the Scotsmen coming to Poznan at the turn of the 17th century was Peter Tepper, a furrier. He belonged to the Poznan patriciate and was an owner of three houses located in the Market Square. He married Dorothy Peterson, who was also of Scottish origin. From the marriage their daughter Elisabeth was born, who also married a merchant of Scottish origin, Mr. Fergusson. Daniel Tepper died on 4 August 1696, and the pharmacy belonging to his heirs was closed some decades later. Daniel Tepper's pharmacy inspired interest again some years ago when archeological excavations in the Poznan Market Square revealed some English pharmaceutical flasks in the place where his pharmacy was formerly located. Among them there was the greatest curiosity - a small flask of particular shape, slightly damaged at the top, made of dark green lead glass, with a partially illegible inscription located on adjacent sides: "*... Royall Patent Granted to/ ... don/ Invented Balsam of Life/Jan...*" This indicated that it was a flask of a medicine described as *"King Royall Patent Granted to/ London/ Invented Balsam of Life/ January 1796"*, known as "Turlington's Balsam", very common at that time in England, Scotland and North America. It appeared that the medicine, one of the first patented drugs, was known also in Poland. It was probably imported by the heirs of Daniel Tepper.

It was not the only English medicine known in Poland. A drug invented by Thomas Wilson, patented in 1781, and known as "*Patent Aqua Drops*" or later as "Solutio Fowleri", included in the Polish Pharmacopoeia (*Pharmacopoea Polonica II*) published in 1937.

While recalling forgotten relationships between Polish and Scottish pharmacies it is proper to recall the first professor of chemistry and pharmacy of the University of Vilnius - Jedrzej Sniadecki (1768-1838) - educated as a physician, who completed his knowledge of the achievements of that time in the University of Edinburgh.

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History of Pharmacy on the Internet

Christiane Staiger,
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The very fast growing Internet is not only a valuable source for communication but also a powerful tool for information and research. As it will continue to change the way of communication and the exchange of information in the next millennium, pharmacy historians should learn, explore and use the Internet in order to promote their scientific work. In this article a number of interesting Web sites are introduced.

For those who have never used the Internet before, an expensive investment in computer hardware is not obligatory. You may start with some hours time

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and a few pounds sterling or dollars in a local Internet Café. The young people there will be pleased to introduce you to the basics of computer handling. But be careful: it is likely that you will become infected by the "Internet-Virus" and spend more and more time in front of the screen!

A good starting point is the Navigator History of Pharmacy at **http://www.pharmaziegeschichte.de**, the world's most comprehensive pharmacy history linklist. Links offer a direct connection to the selected web site with only one mouse click. The Navigator History of Pharmacy is available in English and German and is compiled by Dr Michael Mönnich, a pharmacy historian and librarian. The list contains more than 30 Internet resources of special relevance for historians of pharmacy and science in 9 categories. The links offer access to images, illustrated texts, books, databases, academic sites and much more.

The most convenient way of searching a database is online. The International Bibliography of the History of Pharmacy (PhB) welcomes you at **http://www.ubka.uni-karlsruhe.de/pharm/phb.html** and is ready for an online search. Just enter a keyword and a few seconds later you will find the results onscreen. At **http://www.ubka.uni-karlsruhe.de/vts/vts.lit.html** you can browse the index of the book *History of pharmacy*, Vol. 1, by Rudolf Schmitz, with more than 4500 entries online. A *History of Pharmacy in Pictures*, published by the College of Pharmacy at Washington State University, can be found at **http://barbital.phar.wsu.edu/History/** Access to the nearly 60 000 images in the print and photograph collection of the History of Medicine Division of the US National Library of Medicine is given at **http://wwwihm.nlm.nih.gov/** . The collection includes a wide range of portraits, pictures of institutions, caricatures, genre scenes, and graphic art.

Many organisations and academic departments now have their own web site (see table).

In 1994, graduate students and Ph.D. candidates in the history of pharmacy founded a forum in order to strengthen cooperation among graduate students of different universities, promote the history of pharmacy as a recognized discipline and scientific field, and promote interdisciplinary dialogue with graduate students in the History of Science. Their web page is located at **http://staff-www.uni-marburg.de/~schmiede/DFPG.html**.

The Internet provides the opportunity to bridge the gap of many thousands of miles right to your computer. Museums can be visited via a virtual tour. You do not have to travel to Tucson, Arizona to visit the History of Pharmacy Museum at the University of Arizona's College of Pharmacy, just go to **www.pharm.arizona.edu/museum/index.html**, admission is free! The German Apotheken-Museum is open 24 hours a day at **www.deutsches-apotheken-museum.de/** as is the Marvin Samson Center for the History of Pharmacy at the Philadelphia College of Pharmacy and Science at **pharminfo.com/gallery/pcps.html** and the Royal Pharmaceutical Society's museum at **www.rpsgb.org.uk/infocentre/mus_index.htm**

If you like to share experiences and have fruitful discussions with other colleagues, you should join the History of Pharmacy discussion group, moderated by Greg Higby, University of Wisconsin. To learn more about the group and how to apply, simply go to **www.pharmweb.net/pwmirror/pwq/pharmwebqg.html**

A world-wide email directory of researchers in the History of Pharmacy, Pharma-cology and Therapeutics is located at **www.ff.ul.pt/~jpsdias/histfarm/intlemldirhp.html**.

The Internet offers so many opportunities for historians, pharmacists and researchers that only a few can be mentioned here. Many more can be found on the Navigator History of Pharmacy and further by browsing the net. Don't be afraid, simply press the start button of your computer and join a world-

Organisation	**Web Address**
American Institute of the History of Pharmacy	www.pharmacy.wisc.edu/aihp/index.html
Australian Academy for the History of Pharmacy	www.psa.org.au/academy.htm
British Society for the History of Pharmacy	www.bshp.org
German Society for the History of Pharmacy	www.dggp.de
International Society for the History of Pharmacy (IGGP)	www.histpharm.org
Academic Departments	
Department for the History of Pharmacy, Technical University of Braunschweig	www.tu-bs.de/institute/pharmtech/pharmgesch/
Department for the History of Pharmacy, University of Greifswald	www.uni-greifswald.de/~pharma/gesch.html
Institute for the History of Pharmacy, University of Marburg	www.pharmazie.uni-marburg.de/fbpharmazie/pharmgeschi/inhalt.html

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wide community, but beware the "Internet-Virus" infection doesn't get you!

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2. Mönnich, M. Orientierung im Internet mit Suchmaschinen. *PZ Prisma* 1998; 5: 257-267.

Dr David Livingstone's Fever Powder

Jalap resin	8gr
Calomel	8gr
Quinine	4 gr
Rhubarba	4 gr

Mix well together and when needed make into pills with spirit of cardamoms. Dose from 10 to 20 grains. The mixture keeps best in powder. If not relieved in 4-6 hours... a dessertspoonful of Epsom salts may be taken. Then quinine in 4-6 grain doses completes the cure. It is usually given till the ears ring or deafness is produced.

Dr Livingstone sent this prescription to the Foreign Secretary of the London Missionary Society in 1860.
Contributed by Prof. P Isaac

The Pharmacopoeial History of Colonial India

Prof. Harkishan Singh

In the beginning the East India Company was interested only in trade. The company made huge earnings during the seventeenth century. In the early eighteenth century as the Mughal empire weakened, the Company began to have a political sway. During the 1750s and 1760s Bengal and South India came under Company's control, and there was a rapid increase in English power. By 1813 the East India Company was left with only a mere shadow of economic power in India. The real power was now wielded by the British Government. By the end of the nineteenth century India was transformed into a classic colony. The whole of India came under British control, barring a few pockets which remained under the French and Portuguese. India attained inde-pendence in 1947. This brief depiction of the political and economic scene may provide an appropriate background and relative time frame for looking at the pharmacopoeial history of India.

With the arrival of the British, the western system of medicine started taking root. In the beginning an active interest also continued in the indigenous systems of medicine. As British supremacy on the Indian subcontinent became well established in the nineteenth century the new medical profession started emerging. Medical education on western lines was introduced at Calcutta and Madras in 1835 and some years later at Bombay.

London Pharmacopoeia

For entry to the new profession a study of the *London Pharmacopoeia* was essential. For materia medica classes Phillip's English translation of the *London Pharmacopoeia* was prescribed. Hindustani versions of the Pharmacopoeia became available as early as 1824; these were in Devnagri and Persian scripts. Revised translations were made in the 1840s.[1,2] Even a translation in Bengali was prepared. The medium of instruction was English but the Hindustani versions were used for lower level medical classes where the instructions were evidently in local languages.

Bengal Pharmacopoeia (1844)

Gradually the focus shifted to the British system of medicine. However, attention was also paid to the Indian materia medica. In 1837, the East India Company constituted a committee which was to examine the working of the Company's dispensary and also to study the feasibility of producing a Pharmacopoeia of India.[3] One of the prominent members was William Brooke O'Shaughnessy.[4] The Committee suggested the preparation of a Pharmacopoeia for Bengal and Upper India. A careful scrutiny of the Indian medicinal plants was recommended. Consequently, a committee was appointed with O'Shaughnessy as the Secretary and Editor of the Pharmacopoeia. He started examining drugs of Indian origin through chemical and clinical experiments. Soon the Medical Board of the day asked him "to relinquish much of his experimental researches and devote himself to the task of compiling not only a Pharmacopoeia, but a Dispensatory of general Materia Medica". In due course he brought out the *Bengal Dispensatory and Pharmacopoeia:* Volume 1 - *The Dispensatory*, published in 1841.[3]

This is generally referred to as the *Bengal Dispensatory*. Later, in 1844, the pharmacopoeia entitled the *Bengal Pharmacopoeia and General Conspectus of Medicinal Plants* was published.[5] The publication was by order of the Government. It became generally known as the *Bengal Pharmacopoeia.* The latter was prepared on the lines of the *Edinburgh Pharmacopoeia* and the pharmaceutical preparations were prepared accordingly, using the drugs of the Indian materia medica. The dispensatory and the pharmacopoeia were standard works on drugs of Indian origin. The *Bengal Pharmacopoeia* also included certain imported drugs.

Pharmacopoeia of India (1868)

On publication of the first *British Pharmacopoeia* in 1864, Edward John Waring,[6] made a case for an Indian Pharmacopoeia. On 4 March 1864 he addressed a proposal on the topic to the Under Secretary of' State

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for India.[7] The proposal was largely welcomed. The India Office accepted the proposal and entrusted the work of preparing the pharma-copoeia to E. J. Waring. The preface to the first *Pharmacopoeia of India*,[9] published in 1868, provides information on the follow-up subsequent to the initial proposal by Waring, who became editor of the Pharmacopoeia. He worked under the supervision of a committee, with Sir J. Ranald Martin as the President. The Committee was composed of a distinguished membership: five of the eight members were Fellows of the Royal Society of London. The members mostly had experience of working in India. The Committee held their first meeting at the India Board Office, Cannon Row, London, on 15 March 1865. All the committee work was done in London and the Pharmacopoeia was published from London, with the authority of the Secretary or State for India. Monographs on the selected materials were divided into 'officinal' and 'non-officinal' classes. The former category included articles which were official in the *British Pharmacopoeia* 1867 and those indigenous products of India where efficacy was well established. The non-officinal' list comprised articles which possessed considerable activity but their reputation was not as well established. Some articles in use but considered to be of doubtful value were also included.

The *Pharmacopoeia of India* was not only a pharmacopoeia in the ordinary sense of the term but was also made to be of educational value; it was a treatise on materia medica and therapeutics. European drugs were projected for use in India and the introduction of indigenous drugs of India into European practice was envisaged. The contents and arrangement of articles in the *Pharmacopoeia of India* were lauded but there were adverse reactions to the inclusion of a number of drugs which were unimportant and to the wisdom of including all the drugs of the *British Pharmacopoeia* was doubted.[10] Certain of the drugs which required to be used in a fresh state were not available in India and some would have undergone decomposition in the tropical climate. But as we examine the course of events which followed, it is evident that the long-range objective of the British Government was to bring in western drugs.

A supplement to the *Pharmacopoeia* painstakingly prepared by Moodeen Sheriff,[11] was published from Madras in 1869.[12] It was a catalogue of Indian synonyms of the medicinal plants, products, and inorganic and organic substances included in the *Pharmacopoeia*, with explanatory and descriptive remarks in fourteen languages. In a review it was stated that 'but for its appearance the *Pharmacopoeia of India* must, to a great extent, have remained a dead letter'.[13]

The *Pharmacopoeia of India* (1868) continued in vogue until around 1885. It used to be on the list of stores supplied by the medical depots. The Government of India considered it to contain all the information afforded by the *British Pharmacopoeia 1867*. This is borne out by an order of the Government of May 1885, directing removal of the *British Pharmacopoeia* from the list of stores supplied by medical depots.[14] Later, in March 1886, on publication of the

British Pharmacopoeia 1885, Government of India made this pharmacopoeia the 'sole authority on all matters relating to pharmacy' and sanctioned 'its use to all military hospitals in lieu of the Indian Pharmacopoeia.[15-17]

The supremacy of the *British Pharmacopoeia* was thereby promoted and the prospects of the *Pharmacopoeia of India* as a result dwindled. By the turn of the nineteenth century the *Pharmacopoeia of India* ceased to attract attention. In the subsequent literature these have been very sparse references to the *Pharmacopoeia.* The first official *Pharmacopoeia of India* had passed into history and for all practical purposes it was a dead document.

1900 Indian and Colonial Addendum to the British Pharmacopoeia 1898

The British were fully in command and the colonial power was at its zenith by the close of the nineteenth century. The creation of an imperial pharmacopoeia for use by the whole of the empire was intended.

While preparing the *British. Pharmacopoeia 1898* the recommendations from India and other British colonies were taken note of. An appendix listed a small number of alternative substances or preparations the official recognition of which had been desired for local use. In 1900 there followed the *Indian and Colonial Addendum* to the 1898 pharmacopoeia. This covered better known drugs and preparations.

There cropped up a controversial issue regarding the 1900 *Indian and Colonial Addendum.* It was observed that lard was the ingredient in some of the preparations. The British were very cautious that the religious susceptibilities of the Indian subjects were not hurt in any way. Therefore, *Government of India Edition 1901* of the Addendum was brought out.[19] Some minor modifications were made. Lard, the internal fat of the abdomen of pigs, was replaced by prepared suet, the purified internal fat of the abdomen of sheep.

British Pharmacopoeia 1914: 'Imperial Pharmacopoeia'

It was indeed the official policy to have an Imperial Pharmacopoeia. The chairman of the British Pharmacopoeia Committee, while inviting suggestions for entries from India to such a pharmacopoeia,[20] through his letter of 10 September 1904, drew the attention of' the Secretary of State for India to the *Indian and Colonial Addendum* where in the preface it was stated that this publication was 'preparatory to the ultimate production of a complete Imperial

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Pharmacopoeia.'[22]

The articles in the *Indian and Colonial Addendum* which stood the test of experience were included in the general body of the *British Pharmacopoeia 1914*.[23] This new pharmacopoeia was considered 'suitable for the whole British Empire.'[24]

Though necessary measures had been taken by substitution of lard by suet for making certain official preparations in India, it was still considered appropriate to ascertain if publication of a special Indian edition of the *Pharmacopoeia* would be required. The General Medical Council, through their letter of 30 September 1914, sent to the India Office in confidence an advance copy of the *British Pharmacopoeia 1914* and enquired if a special issue of the publication would be required for use in India.[25] The matter was referred to the Government of India for examination. It was noted that the pharmacopoeia included a monograph on Ox Bile (page 147) and 'Ox Bile would offend the Hindoo as Hog's Lard would offend the Mussalman.' However, the Director General, Indian Medical Service, opined 'The fact that Ox Bile is included in the Pharmacopoeia does not oblige Indians either to prescribe, purchase or take it as a medicine.' So after having the issue studied, the Viceroy of India on 20 December 1914 cabled the Secretary of State for India, saying 'We do not require special edition marked Government of India.' Evidently, the British by now had become more firm and confident about their hold on India.

Indian Pharmacopoeial List 1946

Soon the political environment started changing considerably. There was rise in nationalistic fervour. With the changing situation the movement for a separate *Indian Pharmacopoeia* also picked up. A general professional consensus was built up in its favour during the intervening years. Even the report of a government-appointed Drugs Enquiry Committee (1930-31) recommended that steps should be taken to compile an *Indian Pharmacopoeia* without delay. This was not acceptable to the Government of India.

After a long gap the *British Pharmacopoeia 1932* followed. At this stage the question of imperial publication was allowed to subside. No drug from the colonies in particular, as was the case earlier, was included. The British materia medica developed a strong hold.

However, an advocacy for a separate *Indian Pharmacopoeia* continued. The stage had been set for taking a serious note of the movement for its creation. The Government continued to dillydally on the issue. All that happened was publication of the *Indian Pharmacopoeial List 1946*.[26] The List was intended to serve as an Indian supplement to the *British Pharmacopoeia 1932*. Work on the preparation of the *Indian Pharmacopoeia* started only in 1948, after independence.

A detailed and illustrated pharmacopoeial history of a sesquicentury is the subject of a research monograph published in 1994.[27] Therein the history of the *British Pharmacopoeia* up to its 1953 edition is also covered. Until the early years of independence the *British Pharmacopoeia* remained our major book of standards for statutory control over drugs.

Acknowledgement

My pharmacopoeial research has been supported by the University Grants Commission, New Delhi, for which I am thankful.

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Review

Antimony in Medical History: *an account of the medical uses of antimony and its compounds since early times to the present*
by R Ian McCallum, 1999. Bishop Auckland: Pentland Press, pp xviii, 125. ISBN 1-85821-642-7. £15.00.

This scholarly work by a former colleague will appeal especially to medical historians, for whom its vocabulary will prove no obstacle. However, in view of the widespread use of antimony compounds in such nostrums as Lionel Lockyer's Pill, Dr James's Fever Powder, and Spilsbury's Antiscorbutic Drops, it will also be of great interest to historians of pharmacy. (I was most interested to see the illustration of the calcination of antimony by sunlight from a work of Nicolas le Fèvre in 1670, that was reused in a broadside advertisement for Lockyer's pill in 1702 - plagiarism by Lockyer's successors or tradition?)

Emeritus Professor McCallum held the Chair of Occupational Health in the University of Newcastle upon Tyne, and was concerned from the late 1940s with advising Associated Lead Manufacturers (part of the Cookson Group, which gave valuable support to this publication) on controlling the ill-effects of antimony to workers processing this metal. His long-established interest in antimony and its compounds led to the historical research enshrined in this book.

The first chapter deals with the uses of this substance from the earliest times to the fifteenth century, when alchemy had led to what the author calls iatrochemistry, the beginnings of medical chemistry. His breadth of reading is formidable, so that this work will provide a ready quarry for other historians of medicine or pharmacy. The next two chapters carry us through the sixteenth and seventeenth centuries, and the fourth chapter is devoted to the symbolism of antimony. I must admit, with shame, that, as one on the very periphery of pharmaceutical history, I often found myself out of my depth while reading the early chapters; I should have greatly valued a (perhaps impossible) conflation of the early writings on antimony.

The underlying idea of bodily humours that had to be brought into balance for good health lasted long after belief in humours had died - disease could be cured by removing the causative matter by bleeding, vomiting, purging or sweating. (Byron probably died from bleeding by his physicians rather than from the effects of his fever.) Antimony was useful in producing all these methods of 'removal', as is shown in the seventeenth-century woodcut on p. 19. The sixth chapter describes two ways of giving relatively mild doses of antimony compounds: the antimony cup and 'perpetual pills'. The cup was filled with wine and left for a few days; the *vinum stibiatum* so produced was then used to provide several doses of antimonial medicine; the Romans were said to use this medication. The perpetual pills (presumably antimony metal or a relatively insoluble compound) were swallowed; 'When they are returned from out of the Body, it is but washing and cleaning them again, and they will serve as oft as you please'.

I found the seventh chapter, dealing with the eighteenth century, particularly interesting, as alchemy gave way to informed iatrochemistry, while quacks and orthodox practitioners lived side by side and (is it too scandalous to suggest?) contributed to each other's practice. This was the century of Boerhaave, a towering figure in medical practice, and of Dr James's fever powder, upon the use of which the death of Oliver Goldsmith has been blamed. As the author writes in chapter 8, 'Therapeutic use of antimony compounds continued into the nineteenth century and they were readily available. They were to be found [quite commonly in the form of tartar emetic] in many domestic medicine chests including that of Queen Victoria'.

In the final chapter we are brought into the twentieth century, introduced to homoeopathy with its huge dilutions, and shown the continuing use of antimonial compounds by allopathic practitioners for the treatment of such diseases as schistosomiasis and leishmaniasis. Professor McCallum also explodes the much-noised theory that cot deaths are caused by stibine produced from fireproofing substances used for cot mattresses. At the end there is a useful table of the names by which the many antimony preparations have been known, an appendix listing the ores of the metal, and a list of 215 references.

At £15.00 this book is an astonishing bargain these days. It is well cased in cloth-covered boards and provided with an attractive dust jacket. I am glad to have this book to add to my minuscule collection of works on antimonial medicines, and it should be on the shelves of all pharmaceutical historians.

Wylam **Peter Isaac**

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Lamert, *The Origin of Quack Doctors* (1829) and its Background

Dr Iain Beavan and Prof. Peter Isaac

The twelve-page chapbook, *The Origin and History of Quack Doctors*, was published in Aberdeen in 1829 by Robert Cobban, and sold at 1d. Chapbooks had been published by James Chalmers II, proprietor of the *Aberdeen Journal*, between c.1780 and c.1800, presumably for sale within the city and the rural hinterland; and Peter Buchan, from his press in Peterhead, somewhat over thirty miles (50 km) to the north of Aberdeen by road, printed perhaps thirty such works between c.1817 and c.1825. But within the city itself all available evidence suggests that relatively few such texts were printed between the beginning of the nineteenth century and the 1860s. *Quack Doctors* is one of a small number of local chapbooks and songsheets printed with primarily the urban market in mind, for sale by hawkers on the streets of Aberdeen, and produced in response to a well-recognised local event. Essentially, topicality was the feature that was meant to appeal to potential buyers, and, unlike many chapbooks, *Quack Doctors* is a sophisticated piece of writing.[1] The author is unknown, though it is reasonable to assume, given the content of the text, that the writer had medical knowledge and access to a wide range of references.

Robert Cobban, the printer of *Quack Doctors*, was no stranger to controversy. In January 1826 he launched the weekly *Aberdeen Star*, much given over to a digest of parliamentary politics and comments on current affairs, with space frequently found for poetry or short stories. However, the outspokenness and political stance of this periodical brought forth the inevitable reactions, both authoritarian and literary. After a virulent attack on a series of *Letters to Public Characters on the Proposed New Police Bill* by 'Humphry Clinker' (pseudonym for Thomas Spark, bookseller, and characterised by the *Star* as 'a bloated mass of self-conceit'[2]), the recipient of this criticism launched his *Water-Kelpie*, wherein he conducted a 'Trial of the late editor of the Aberdeen Star before the Court of Common Sense'.[3] Moreover, the *Star*, antipathetic to the Tory ministries of the time, made no secret of its considerable distaste for the political actions of the Duke of Wellington, and was essentially put out of business by the Stamp Office in Edinburgh.[4]

Cobban was singularly unfortunate in trying to establish a local periodical. After the *Star*, the *Aberdeen Lancet* (1831) failed, and a later attempt, *The Squib* (1832) lasted two issues only. But in its short life this last-mentioned magazine offers some insight into the printer and his business. In the first number (12 March 1832) Cobban gave expression to his exasperation:

> To those who are not aware, we beg to intimate that, through the medium of the *Aberdeen Journal*, we respectfully requested those having claims against us to send in their accounts for settlement. We also requested those 'too long indebted to us' to call and settle their respective accounts, otherwise they might depend on their names being published in *The Squib*, price One Penny.

Those named, and encouraged to attend to their debts included a law clerk, messengers-at-arms, teachers, and merchants. Most unpaid bills related to subscriptions for the *Star*, but Cobban & Co had evidently undertaken the printing of funeral cards, unspecified law papers, Sunday-School hymn sheets and law papers. Jobbing printing also included the printing of circulars for a Mr Fergusson, 'Pox Doctor... (Late of Alison Square, Edinburgh.) Pox take the fellow, why didn't he pay us for the pox bills which we printed for him... [?]'[5]

The *Aberdeen Pirate and Highland Plunderer* of 5 April 1832 (p. 61) suggests that Cobban was precipitate in his actions, and remarks on

> that most eccentrict [sic] character, Robert Cobban, the printer and publisher of the *Aberdeen Squib*, a weekly miscellany, in which he had begun to record the names of the persons that he supposed were indebted to him; but some of those persons having taken it into their heads to dispute the matter with him, and it is supposed that the old proverb came into his mind, 'that in a fray one pair of heels is worth two pairs of hands'... off he went.

We know reasonably closely when Cobban published *Quack Doctors*, for he advertised it in the *Aberdeen Journal* of 19 August 1829. Therein, it stands out as something of an oddity amongst the established booksellers' and publishers' advertisements of that year which were giving considerable prominence to the volumes of *Constable's Miscellany*, the various monograph series published under the superintendence of the Society for the Diffusion of Useful Knowledge, and Cadell's reissue of the *Waverley Novels*.

There is good reason to believe that the tone of *Quack Doctors* represented a growing concern in Aberdeen that the working classes should be discouraged from resorting to such individuals and their nostrums, an issue that later became yet more urgent, as in September 1832 a letter to the *Aberdeen Pirate* warned of the ineffectiveness of 'cholera medicines' then on sale in the city streets:

> I advise you and the Readers of the *Pirate* to beware of letting yourselves be humbuged by having anything to do with such Cholera Medicines as are Puffed by Handbills... It is universally allowed by Medical Men of the first respectability... that there has not yet been discovered any specific for this complaint. Therefore, if you be wise, trust not to Puffers.

Moreover, its publication should be viewed against the more general background of efforts to raise the standard of medical teaching and degree examination practice, and the reorganisation (1823) of the Aberdeen Dispensary, 'open to the poor gratis'.[6]

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The chapbook starts with a survey of some of the more infamous quack doctors to have toured Britain, starting from the premise that 'it is impossible they could have any medical knowledge, unless they acquired it by miraculous inspiration, to which indeed a number of them lay claim'. Proceeding via an attack, particularly on 'this self-created' Dr Lamert (see later), and a parody of one of his open-air speeches:

> I am the wonderful high... doctor, chemist and dentrificator... seventh son of a seventh son, of an unborn German doctor... I have a never-failing typtic, corroborating, odoriferous, anodynous balsam of balsams, made of dead men's fat, resin and goose grease, which... by its abstersive cosmetic quality, preserves superannuated women from wrinkles.[7]

The chapbook ends with a reprint of an advertisement that had been previously widely circulated throughout Aberdeen some days before. It was an invitation to attend a 'grand boat race', between Dr Lamert and fellow quacks, with three entrants, each vessel named respectively the 'Balm of Life', the 'Balm of Zura', and the 'Crimson Pill', and each to carry as insignia, the figure of death, a quack doctor, and a grave digger.[8] The winner was to receive 'a Hogshead of the Balm of Zura, (*Infernal Measure*), and One Hundred-weight of Crimson Pills'. The second boat was to receive 'half a hogshead of the Cordial Balm of Life'. Messrs Gout, Asthma and Consumption were to have been the adjudicators.[9] *Quack Doctors* (p. 12) noted, however, that the race did not take place, 'in consequence of the inclemency of the weather not permitting the judges of the Race to leave their apartments'.

THE

ORIGIN AND HISTORY

OF

QUACK DOCTORS

DR. LAMERT, &c.

EXTRACTED FROM MEDICAL WORKS:

TO WHICH IS ANNEXED,

THE BOAT RACE ADVERTISEMENT.

ABERDEEN:

PRINTED BY R. COBBAN & CO. 35, GUESTROW.

1829.

The satiric attack on Lamert made its mark, and was remembered. Five years later, the *Aberdeen Shaver* (September 1834) carried a piece on 'Quackery and Quack Medicines'. It warmed to its theme:

> Besides political quackery, this 'northern city cold' has to labour under a large degree of medical quackery, which is certainly of a more fatal quality than the former... your medical quack gives us a quietus in the shape of a pill - [and] off we are to the next world for good and all, in a twinkling.
>
> The most barefaced of all the quacks who have visited us is LAMERT... Will it be believed, that while this arch quack was here last, his rooms were crowded with dupes, who threw away their money on his stuff - persons who, as the public physicians know well, will work away with Lamert... and swallow medicines till they have neither a penny nor a constitution, and then they will throw themselves on the Dispensary or the Infirmary as a finish!

The *Shaver* was particularly concerned to dissuade customers from patronising the shop of one Charles Fyfe, merchant, for the purchase of Lamert's medicines:

> We had hoped that when Lamert cut from town the deception would have gone with him; but he has planted a church here, and endowed it, and Charles Fyfe is minister!... We cannot wish him God speed; but we do say that we wish him such success as he deserves; and... to help him on, we [i.e. the *Shaver*] subjoin a copy of a squib which was let off against Lamert, and plentifully distributed, on his visit here in 1829. The thing took effect; and although the fellow went about on Sabbath morning and superintended a man in taking down the bills with a brush and hot water, the laugh rooted him out, and he ran for it.

If the *Shaver* is to be believed, then *The Origin of Quack Doctors* appears to have been an effective antidote to Lamert himself. It is certainly the case that behind the amusing nature of *Quack Doctors*, lay an educative purpose. But indications are that the *Shaver*'s use of the printed word may not have been so efficacious in slowing down the sale of quack medicines and pills by Charles Fyfe, as he was still in business some years later, as an importer of cigars, and as an agent for various merchandise, including Grimstone's Celebrated Eye Snuff.

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The Lamerts

There was more than one 'Dr' Lamert, as notes to one of us from Dr J. Burnby demonstrated. Dr Burnby's collection of newspaper advertisements yielded the following:

Derby Mercury, 28 February & 14 March 1793

DR LAMERT, OCULIST
No 10 Church St, Spitalfields
will give advice for a considerable Time as usual every Friday from 5°c in the afternoon till 9°c in the evening; on Saturday morning, from 8°c till 9°c in the evening at Mr TORR's joiner in Fletchergate, Nottingham, and every Thursday evening till 2°c on Friday at Mr MATHER's, Ironmonger, Derby.

[According to 'unsolicited' letters, he had cured Black Jaundice, ulcers on the lungs, abscess under the ears, convulsions, King's Evil and declines, as well as Cancer in the navel.]

The Public could be visited as the Doctor is furnished with Carriages and Horses. Secrecy will be observed. Advice gratis.

The Public is to notice that Dr Lamert has visited the area before, and has often advertised in the Northampton and Leicester Papers.

Derby Mercury, 7 March 1793

March 6, Derby. On Thursday last Dr Lamert arrived at this place where he continued till Friday; the numbers that applied to him for relief is amazing.

Derby Mercury, 28 March 1793

NOTICE TO THE PUBLIC
Dr Lamert acquainted his Friends, and the Public in general, that he set off from LEICESTER on Tuesday last, for London; where he will enjoy himself with his Family at No. 10 Church St., Spitalfields for the space of 14 days,
and will return to BURTON-ON-TRENT, Wednesday evening 10th. of April and will continue on Thursday till 3°c at Mr Atterbury's.[10]

[He would then attend at Derby and Nottingham as before.]

[It seems likely that Mr Atterbury was an auctioneer, because a year later he was auctioning hops, malt, powder sugar, glue &c at the White Hart, Burton-on-Trent.]

Derby Mercury, 4 April 1793

Dr Lamert was in Burton, Derby and Nottingham, and so does not appear to have had his promised break.

Derby Mercury, 18 April 1793

Dr Lamert published a collection of 'unsolicited' letters from Nottingham and Leicester, and wrote that he would be making the following visits in the previously advertised route and would be at: Mather's, Derby; Torr's, Nottingham; Mrs Dalby's, Swines Market, Leicester; Mr Stones, Druggist, Hinckley; Mr Atterbury, Ashby-de-la-Zouch, and Mr Atterbury, Burton-on-Trent.

Derby Mercury, 2 May 1793

Dr Lamert would now be staying at: Mr Flint's of Uttoxeter; Mr Atterbury's of Burton-on-Trent; Mr Mather's of Derby; Mr Howard's of Ashborne.

Derby Mercury, 16 May 1793

Dr Lamert was now visiting Uttoxeter, Derby and Ashbourne.

Derby Mercury, 6 June 1793

DR LAMERT'S SCHWEITZER'S RESTORATIVE NERVOUS AND RHEUMATIC BALSAM

A fresh supply had just been received by John Drewry I [proprietor of the *Derby Mercury*, and a printer, bookseller, stationer and bookbinder of Derby and London]. Others who sold it were: Mr Humphreys, perfumer to His Royal Highness the Duke of York, 10 Oxford St; Mr Palgrave, druggist, Bedford; Mr Edge, druggist, Northampton; Mr Stone, druggist, Hinckley; Mr Dewis, druggist, Ashby-de-la-Zouch; Mr Swinfen, druggist, Leicester. [Swinfens eventually became big wholesalers of pharmaceuticals.][11]

Derby Mercury, 20 June 1793

Dr Lamert writes that he has had notice that his Balsam is being sold by itinerant sellers, but, he says he never sends his medicines 'to hawk about', so those who do so are imposters.

[It seems from these repeated advertisements that Lamert was not afraid to return to his old haunts, as many 'quacks' were.]

Newcastle Chronicle, 6 February 1820

We understand, on a fair calculation, that during Dr Lamert's residence in Newcastle and his occasional visits to various towns in Durham and Northumberland, no fewer than 3000 persons applied to him. A list of cures will be put before the public who can then judge his skill.[12]

Dr Lamert informs the public he may be consulted every Day at Mr Robert Wait's, Eastern Lane, Berwick, until 12th. inst. He has been repeatedly asked during his short residence in Berwick to visit Dunse, Coldstream and Kelso, and so now informs those who require his advice that he may be consulted on Wednesday 16th. February from 10 a.m. to 5 p.m. in the White Swan Inn, Dunse. Thursday 17th. from 10 a.m. to 3 p.m., in the Black Bull Inn, Coldstream, and on the same evening from 5 p.m. to 9 p.m. On the following day, Friday, February 18th. at the Cross Keys, Kelso, from 9 a.m. to 4 p.m. For those days only.

Also advertised were 'Dr Lamert's Anti-bilious Pills. Prepared and sold by Dr Lamert, 10 Church St., Spitalfields, London'.

The Cambrian, 7 July 1848

Dr La'mert on the Secret Infirmities of Youth and Maturity, with 40 coloured engravings. Just published; in French or English.
2s.6d. in a sealed envelope, or post free for 42 stamps [3s.6d].

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B. Samuel La'mert, M.D., 37 Bedford Square, London.
L.S.A.
Doctor of Medicine, University of Edinburgh.[13]

Conclusion

In spite of the exposés and jibes of Robert Cobban and his like, quack remedies, their practitioners and their widespread advertisement were still with us until well after the Second World War - even after the passage of the Pharmacy & Medicine Act in 1941. Today we more politely (or, *horribile dictu*, politically correctly) call it 'Fringe Medicine', but there is no denying that it still exists when people can believe in the power of the 'Black Box', or adhere to the 'Copper-bracelet Cure'. This said, one cannot help feeling a sneaking sympathy for earlier users of nostrums, in the face of the then costly and generally useless, or even dangerous, 'legitimate' medicine.

References and Notes

1. With its references to actual individuals and particular occurrences, there are some similarities between the chapbook, and the flurry of song sheets which appeared on the streets of Aberdeen when its civic bankruptcy was declared in 1817, e.g. *Last Speech of the Town's Officers*. Aberdeen: Booth, 1817 or 1818.
2. As quoted in Bulloch J. M. A bibliography of local periodical literature. *Scottish Notes & Queries* 1887-88; 1: 40.
3. *The Water-Kelpie*. 1827; 1: 3, 16-24.
4. The Stamp Office contacted the publisher in July 1827. One month later it ceased publication.
5. *The Squib* 1832; 2: 1.
6. Marischal College, Aberdeen, had taken legal advice, only to learn, with some embarrassment, that it could not deprive William Brodum, regarded as a quack, of the medical degree it had so carelessly conferred upon him in 1791. See *Fasti Academiae Mariscallanae Aberdonensis*, P J Anderson [ed], 3 vol. Aberdeen: New Spalding Club, 1889-98; 2:133-4. Marischal College regulations of 1808 required every candidate to declare that he had not the slightest connection with 'patent specifics or drugs'. *Fasti*; 2: 142-3. Further regulations were issued in 1825. The writer of 'Letter on the Universities' in the *Aberdeen Censor* November 1825; 17: 180, in commenting on the tightening of examination conditions, noted that 'No more genteelly-dressed young gentlemen, without brains, are to be honoured with the title of A.M. after a mock examination; and no more English quacks, with their brains in their breeches pockets, are to be dubbed Doctor without any examination at all'. See also J H Wilson. *The Bon-Accord Repository of Local Institutions*. Aberdeen: King 1842; 135-6.
7. *Quack Doctors*, 7-8.
8. *Quack Doctors*, 6, describes the 'scarlet pills' as 'the common Mercurial Pill coloured with vermillion'.
9. *Quack Doctors*, 11.
10. Atterbury does not appear in the British Book Trade Index, which has entries for some, but by no means all, auctioneers.
11. Information from Dr J. Burnby.
12. Sarah Hodgson, proprietor of the *Newcastle Chronicle*, and one of Newcastle's largest printers, booksellers and publishers, was also a large-scale wholesaler of nostrums. She is better known as the first printer outside London, Oxford and Cambridge to print in arabic type.
13. Samuel La Mert, Church St., Spitalfields, gained the L.S.A. 11 April 1833. In view of this address it seems certain that Samuel La Mert is closely related to the 'quack' Dr Lamert, if he is, indeed, not identical.
14. A search of the records of the University of Edinburgh yields no evidence that a Lamert, however spelt, was awarded an MD, but the Medical Register of the 1860s includes the name of Dr Lima Abraham La'Mert. Information from Miss Jean Archibald, of theDepartment of Special Collections, University Library, Edinburgh.

Review

Apotheker-Kalender 2000 : Calendar for Pharmacists
Deutscher Apotheker Verlag, Birkenwaldstrasse 44, D70191 Stuttgart, Germany; ISBN 3-7692-2529-5. Price DM68 (about £23).

The pages for January and November, taken from a 'Friendship Book' or autograph album, have two pharmaceutical scenes. January shows a store-room and a patient at the dispensary counter, whilst November has another view of the dispensary and an exterior view of the pharmacy in which the patient appears to be either handing in or collecting a prescription and at the same time being well and truly 'counselled'.

As in previous calendars, 18th and 19th century glass bottles (February) are figured, as are glass jars containing drugs of animal origin of about the early 18th century (September); as was usual, the rasped 'unicorn horn' was more mundanely narwhal teeth. Faience jars made about 1800 at Kelsterbach, but unlabelled (June), are also well illustrated. July shows a delicately wrought-iron 'table-grille', something rarely seen in Britain (its place being taken by the more solid dispensary screen) which came from Würzburg or nearby.

There is an interesting reconstruction of the Drees Pharmacy in Berntheim which now can be seen in Osnabrück's museum (December), and excellent water-colours of the exteriors of two pharmacies, the Green Pharmacy in Erfurt (October) and the Unicorn at Bamberg (April). The latter dates back to 1696 when it was opened by Georg Friedrich Boxberger, but unhappily did not survive the last war as it was bombed in early 1945. It was reopened in 1954 on the same site, but again repeated so much of pharmacy's recent past when it finally closed its doors at the end of 1997. The Green Pharmacy has been more fortunate as it has recently moved next door into larger premises.

A highly decorative herbal's title page, a woodcut, is depicted, that of the Camerarius edition (1586) of Pier Andrea Matthiolus in August. May has a cartoon of a pharmacist called 'Pestle' in Bamberg's Carnival parade of 1837 (May), but one suspects this 'pharmacist' should be more accurately be termed a 'quack'.

Perhaps the most innovative illustration (March) is the painting by Niklaus Stoecklin (1896-1982). It commemorated the work of Arthur Stoll (1887-1971) who founded the pharmaceutical division of Sandoz AG.

J. Burnby

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The Herbal Medicines of the mid-19th Century Botanical Societies

Dr E. Waters

When the doctors despaired of their daughter's life, Rachel and Charles Anderton turned for help to a member of the local Botanical Society. Under his care and regime of herbal remedies the girl soon became stout and strong, and well enough to start working at Mr Eckersley's mill. So runs the testimony to her cure from consumption, signed by two Independent Ministers, a Sabbath School Teacher and the Secretary of the Wigan Temperance Society.[1]

The mid-19th century botanical societies prescribed treatments based on the system established by an American frontier farmer, Samuel Thomson. He taught that people should look after their own health, and could do a far better job than trained doctors provided they rejected conventional medicine in favour of herbal treatment. His message had been brought to Britain in the late 1830s by one of his followers, Albert Coffin, and found a ready audience in the burgeoning towns of the industrial north, where medicine was often beyond the means of working class pockets and disease was ever present.

Materia medica

The materia medica inherited by the British botanists from Samuel Thomson comprised several dozen herbs, many of them American in origin. Lobelia (*Lobelia inflata*) was referred to by the Thomsonians as No. 1, and credited with almost miraculous powers. Bayberry (*Myrica cerifera*), white pond lily (*Nymphaea odorata*), Canadian pine (*Pinus canadensis*), and sweet sumach (*Rhus aromatica*) were recommended as astringents. Golden thread (*Coplis trifolia*) and golden seal (*Hydrastis canadensis*) were employed for their bitter properties.

These native plants were not of Samuel Thomson's own discovery. They were described in the major works on American medicinal flora, and several were included in the United States Pharmacopoeia and dispensatories. Vegetable medicines followed the potato and the tomato across the Atlantic, some winning recognition from British dispensatories and pharmacopoeias. Supplies of North American herbs however were unreliable, especially in the provinces, and so the English botanists provided information on local, more plentiful, substitutes. A working class movement like medical botany was also, understandably, sensitive to the greater expense of imported medicinal plants. Reliance on home-grown and traditional remedies rapidly became the rule rather than the exception. Of the 92 herbs listed in John Skelton's *Family Medical Adviser*, published in 1852,[2] only a dozen were of American origin, and of these, sarsaparilla (*Sarsaparilla officinalis*), sassafras (*Sassafras officinale*) and guiacum (*Guaiacum officinale*) were already in common use. For the most part the *Medical Adviser's* list was composed of European and Old World botanicals with well established medicinal virtues. Liquorice, gentian, cloves, mint, and myrrh (*Glycyrrhiza glabra, Gentiana lutea, Eugenia caryophyllata, Mentha piperita, Commiphora molmol*) were in the pharmacopoeias. Valerian, sage, rosemary, dandelion and comfrey (*Valeriana, Salvia, Rosmarinus, Taraxacum* and *Symphytum*) were 'official'. Mouse ear, agrimony and angelica (*Hieracium pilosella, Agrimonia eupatoria, Angelica archangelica*), though no longer widely used by qualified doctors, were still mentioned in standard texts on medical botany.

The similarity between the materia medica of regular and irregular practitioners is only to be expected. Apothecaries and physicians had always drawn on the experience of unqualified healers, while published herbals brought larger worlds of learning to the local users of plants, ladies of the manor and village herbalists alike. Knowledge about herbs and their healing properties crossed boundaries of social class, education, and professional status. With the expansion of print culture in the early 19th century, information on the traditional use of herbal medicine and on its scientific rationale became more accessible than ever before. The leading botanists were men bent on self-improvement. They knew the *Lancet* and the *British Medical Journal* as well as the works of Gerard and Parkinson.

Despite the overlap, the materia medica of the botanical societies was distinctive both for its inclusions and its omissions. American herbs, even if relatively few in number, were more likely to feature in treatments. A typical prescription for acute infectious diseases published in one of the movement's self-help manuals combined lobelia, sassafras and bayberry (*Lobelia inflata, Sassafras officinale and Myrica cerifera*), three Thomsonian favourites. Lobelia in particular was prescribed in large quantities for a wide variety of conditions. Apart from lobelia, the botanists did not rely on plants that contained powerful alkaloids. Purgatives and cathartics were specifically rejected. This was in sharp contrast to orthodox therapeutics of the time. A number of plant remedies omitted from the official Pharmacopoeias by the late 18th and early 19th centuries were still valued by the botanists. A prescription for 'infant convulsion syrup' included sage, angelica and pellitory-of-the-wall (*Salvia officinalis, Angelica archangelica, Parietaria officinalis*). A treatment for dropsy employed wild carrot and parsley piert (*Daucus carota, Alchemilla arvensis*). Marshmallow and raspberry (*Althaea officinalis, Rubus idaeus*) were popular remedies for indigestion. Regular medical practitioners regarded all these herbs as old-fashioned, and by mid-nineteenth century their use was confined to domestic and irregular practice.

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Supply and Distribution

The societies provided instruction in plant identification and organised botanising trips to the countryside that culminated in the award of prizes to the participants who named correctly the most species. Members were encouraged to look to the fields and hedgerows for their medicines, to gather herbs when the sun was up, dry them in airy rooms, and keep them carefully stored in paper bags. Self-sufficiency was an attractive proposition at a time when a visit to the doctor might cost over five shillings and medicines were an extra expense. As Councillor Rawson reminded a Society tea party in Bradford, medical botany was 'good for the pocket', It was not every member, though, who could name plants with confidence, or could command sufficient space for storage, and enough time for gathering and preparing herbs at the appropriate season and during hours of sunshine. The easier option was to purchase from a supplier.

The druggists and chemists, whose number was growing in mid-century, usually sold a range of plant medicines. Making up family recipes was still a large part of their trade, and they seem to have taken the demands of the medical botanists in their stride, without confrontations over issues of medical philosophy or therapeutics. Publications of the botanical bocieties nonetheless raised the issue of 'respectable honest dealers' and unadulterated goods. They advised members to buy from the movement's own suppliers. A few of these 'accredited agents' with a taste or flair for business opened shops of their own. Most worked part-time and kept their herbs at home. Whatever the mode of operation, agents, unlike ordinary druggists, could offer advice on which vegetable remedies were appropriate according to the Thomsonian system, and in what preparations and doses.

Pharmacy

The botanists usually prescribed herbal medicines as infusions and decoctions. A typical decoction was made by simmering 200 g of plant material, comprising from five to eight different herbs, in a litre of water for about 45 minutes; it was taken by the wine-glass, two to four times a day. These preparations and doses conformed to the medical and pharmaceutical conventions of the time. Botanists were far less likely than regular practitioners though to prescribe tinctures. Support for the temperance movement was widespread and water-based medicines were often preferred. John Stevens advised in his *Medical Reform* that if alcohol were required in the manufacture of medicine, in order to absorb active plant constituents such as resins, it could be removed by the simple expedient of adding hot water. 'The scruples of all parties may be satisfied', he commented, 'without in the least reducing the efficacy of the prescription'.[3]

Pills and powders were non-alcoholic, convenient and widely used. Lobelia pills were popular as a stand-by for almost any complaint. 'Composition' powder, a mixture of lobelia, cayenne, bayberry and ginger, was recommended as a cure for colds and fevers. The ingredients of other diuretic, emetic and laxative medicines varied from practitioner to practitioner and were not always disclosed. Advertised locally, often carrying the name of the agent who manufactured them, these medicines sometimes brought in a tidy income.

The prescriptions published in the manuals and journals of the botanical movement specified the quantities of plant material and menstruum in ounces, drachms, quarts, etc. Many members had no access to weighing and measuring equipment and for their benefit instructions in 'handfuls' or 'wine-glasses' were provided. Cayenne was sometimes prescribed in quantities that would 'cover a 4 penny bit' or 'sit on a 6 penny piece'.

Therapeutic System

Samuel Thomson's claim to originality rested partly on his use of native American herbs, but mainly on his 'course', which he advertised as new and revolutionary. For almost all conditions he prescribed a mixture of herbal remedies and applications of steam to encourage elimination. Like many treatments described as new and revolutionary it incorporated much that was long established and orthodox. Above all it retained the 'heroic' style of regular medicine, though the emphasis was on emetics and diaphoretics rather than purgatives. Lobelia owed its position as No. 1 in the Thomsonian materia medica to its powerful combination of emetic and diaphoretic properties which produced rapid and visible effects on the patient.

Pharmacopoeias in the USA and in Britain recognised *Lobelia inflata.* The medical profession considered the plant an excellent remedy for asthma in small doses. Thomson's followers made no secret of the fact that they used pint-sized doses in the treatment of conditions ranging from infant convulsions to typhus. Regular practitioners accused them of prescribing immoderately and indiscriminately, and of thereby putting the health and even the lives of their patients at risk. When Botanical practitioners came before the coroner's court, the expert witnesses frequently judged lobelia to be the culprit. The botanists defended their No. 1 herb with vigour. It was harmless, they insisted. It was the mineral remedies of the orthodox doctors that were dangerous.

Opposition to chemical drugs was a central tenet of botanist philosophy. It provided a sense of identity and mission. Botanists did not deny the importance of scientific investigation. In fact, in the 1850s they maintained close relations with the 'Eclectics', medical reformers in the USA who were 'mad about chemistry' and responsible for extensive research on the constituents and actions of plant remedies. While

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the botanists were willing to accept that minerals could affect the course of disease in the short term, they believed them to play an ultimately destructive role in human health unless first processed by plants and introduced into the human body as food or herbal remedies.

It should come as no surprise to find that the botanists did not include Paracelsus, the promoter of mineral remedies, in their pantheon. As scourge of the Establishment, nevertheless, he set an example that the author of the *Family Medical Adviser*, for one, was proud to emulate. Following in the footsteps of that 'bold' and 'courageous' alchemist, John Skelton, who was a veteran of the Chartist movement, kept up a relentless barrage of criticism of mid-19th century medicine. This did not stop him putting his son through medical school, as soon as he was financially established as a practitioner. Rhetoric apart, his quarrel was with the structure and organisation of medicine rather than with medical science itself, and in this he was typical. The botanists wanted to open the medical profession to all who had aptitude and to make health care available to anyone who needed it. Their reforming zeal stopped short of proposing a new paradigm for medical science. In the main the leading botanists accepted modern physiology and pathology and used their publications to inform the societies' membership of the latest scientific theories about health and disease.

Education, Efficacy and Professionalisation

Medical botany was an earnest and respectable movement whose members believed in the benefits of knowledge. Both John Skelton and John Stevens wrote several books apiece and at least two other 'doctors' associated with the movement, W. Dale of Glasgow and Turnbull of Cheltenham, wrote at length on medical subjects. Of the education and culture of the agents who practised in the neighbourhoods, little is known. Knowledge of medical science was probably limited in most cases to the lectures of the local botanical society and the publications of the national movement. This, in combination with an appren-ticeship in the traditional management of illness, may well have produced effective practitioners. John Skelton's grandmother was a village 'doctoress' and as a child he watched her in action and helped her gather herbs. John Boot, one of his agents about whom we know rather more than most because of the entrepreneurial acumen of his son, had a mother versed in herbal lore and himself ran a successful practice. Family dynasties of this kind may not have been uncommon. As we have seen, the materia medica of the botanists drew on the expertise of apothecaries and physicians from Culpeper to Cullen as well as on the experience of domestic users and local herbalists. If diagnostic skills were rudimentary, the medical profession was itself only beginning to make advances in this field.

By the 1860s the economic and social landscape was changing in ways that undermined the position of the botanical societies. As wages rose workers set their sights on gaining a place in mainstream society rather than on creating an alternative culture. The services of qualified practitioners became more affordable. As standards of medical education improved, doctors won the trust of the working classes. The services of qualified practitioners became more acceptable. The botanical societies, on the other hand, despite their best efforts, did not succeed in making the transition to the era of professionalism. Plans for a medical school and training hospital came to nothing, the movement split, membership dwindled, journals ceased publication and local organisations folded.

By the end of the 19th century medical botany had re-emerged as a national force and still survives as the National Institute of Medical Herbalists. Its goal of professional recognition has been brought a step closer in recent years by the accreditation of degree courses in herbal medicine at several universities. Medical Herbalists continue to draw remedies solely from the vegetable kingdom. While their materia medica has expanded, the original core remains largely unchanged. Of the 92 herbs listed in John Skelton's *Family Medical Adviser,* over eighty per cent appear in the *British Herbal Pharmacopoeia* of 1983, and about sixty are in use by contemporary herbal practitioners and on sale to the self-medicating public.[4] A number of them are included in ESCOP and Commission E monographs and modern pharmacological research demonstrates a scientific basis for their traditional usage.[5]

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3. Stevens, J. *op.cit.* London: Whitaker, 1847; p. 172
4. *British Herbal Pharmacopoeia,* Bournemouth: BHMA, 1983.
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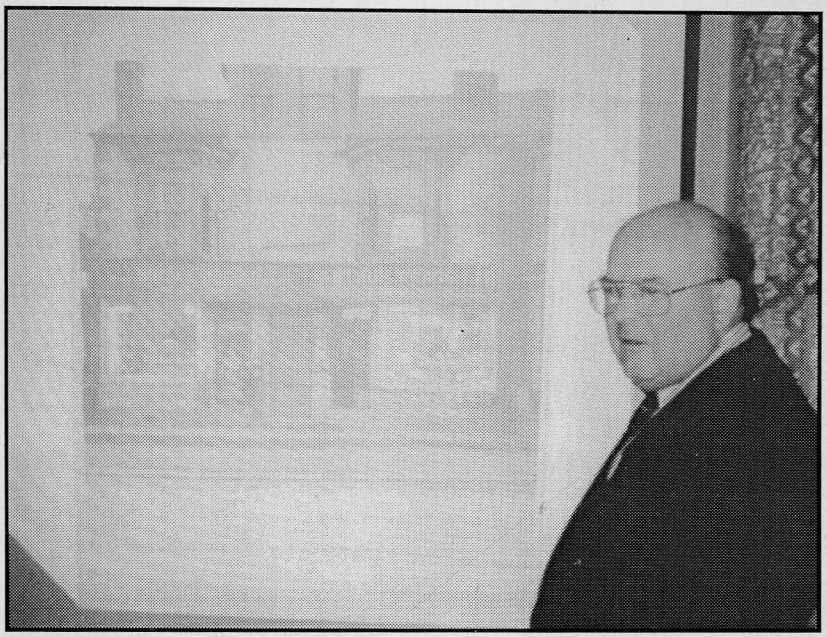
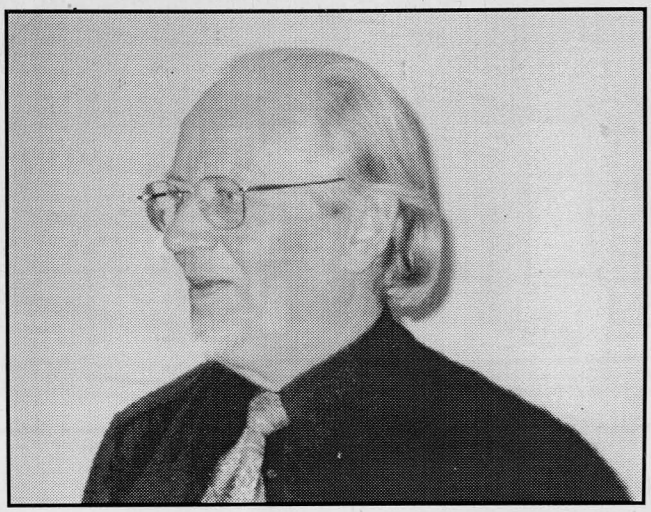


Three speakers at the
BSHP Conference at Aldridge,
1 - 2 April 2000.
Mr. Christopher Wragg,
Dr. Ellen Jordan,
Dr. Melvin Earles



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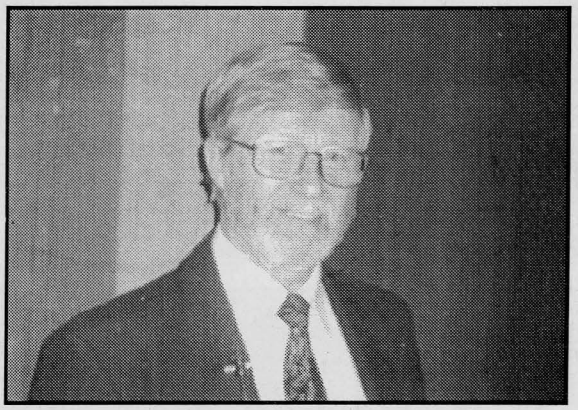
Professor David Cowen, New Jersey
with
Dr. Henri Silberman, Geneva.



Professor Bryan Veitch,
giving the Foundation Lecture
on 16th March 2000

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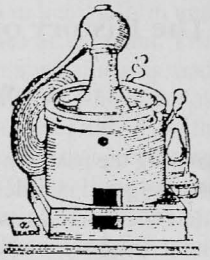

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Contents

Diary

Tuesday 12 September 2000 (note date)
British Pharmaceutical Conference at Birmingham Conference Centre
History of Pharmacy Session at 2.30 p.m.
'The History of the Order of St John from the Crusades to the present day' by Dr A. Llewellyn-Lloyd
'15th January 1913: The day pharmacy in Britain entered a new era' by Dr John A. Hunt
Full details of the Conference may be obtained from RPSGB. There will be a BSHP stand in the Exhibition.

Saturday 23 September 2000
London Open House Weekend Architectural tours of the RPSGB's HQ building.

Wednesday 15 November 2000
'Recent acquisitions at the Wellcome Institute' by Richard Aspin
at 1 Lambeth High Street

Wednesday 14 February 2001
'A history of dentistry' by Professor Stanley Gelbier

Wednesday 14 March 2001
'Swamps, slaves and suspicions' by Mr Robin Price

Wednesday 9 May 2001
'Pharmacy and complementary medicine: a historian's perspective on where we are going' by Dr John Crellin. *Please note the change of date.*

Congratulations

Our vice president, Stuart Anderson, who is senior lecturer in the history of pharmacy at the London School of Hygiene and Tropical Medicine, has been awarded a PhD by the University of London. His thesis was 'A Study of Pharmacy in Hospitals', and the work was carried out under the supervision of Dr Jean Hartley at Birkbeck College.
This brings to five the number of doctors on the BSHP committee and it is to be hoped that others will be encouraged to undertake formal research in the history of pharmacy.

Committee

At the June committee meeting the following officers were elected for 2000-2001:

President	Dr Peter M. Worling
Vice-president	Dr Stuart C. Anderson
Treasurer	Mr John Iles
Honorary Secretary	Mr Peter G. Homan

The retiring President, Mrs Enid Lucas-Smith was warmly thanked for her work as President during the last year and as Treasurer for many years previously.

Web site

Have you looked at the Society's new web site yet (see June issue)? Details of events, merchandise and contact addresses can be found on the BSHP web site at www.bshp.org

The Edwardian 'Finishing School' for Dispensers on the French Riviera

The early years of the twentieth century were the heyday for leisure, travel and adventure amongst the British upper classes. For several thousands of them, the thing to do was to spend the winter months in the south of France. At home, they depended on an army of domestic servants. Abroad, they took servants with them, but depended on locals and expatriates to provide their more general needs. Among these were visiting British doctors or English-speaking French doctors. French pharmacies were owned by French pharmacists and many employed competent British dispensers for the season. The dispensing assistants were recruited through advertisements in the *Chemist and Druggist* and the French experience was considered to give the assistants a good finish to their pharmaceutical studies and British experience. — per S.A. Anderson. Wellcome History 2000 (Feb.); 13: 2.

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Ginseng
The History of an Insignificant Plant

Dr William E. Court

During the past two centuries many plants have been investigated in order to assess their potential value as new medicinal agents or treatments, or as sources of new organic molecules that could be used in contemporary medicine, or could act as templates for the synthesis or semi-synthesis of other potentially useful therapeutic compounds. Among such plants is ginseng, the collective name for a group of plants esteemed by the Chinese for more than 5000 years, but never really accepted in Western medicine and therefore soon forgotten by the Western world until reinvestigation as alleviating agents or cures for the ills arising from modern stressful lifestyles.

The name 'ginseng' is loosely applied to a range of plants from the Araliaceous genus *Panax* although some other non-related and incorrectly named 'ginseng' species are also encountered in current commerce e.g. *Eleutherococcus senticosus* Maxim, Fam. Araliaceae (Siberian ginseng), *Pfaffia paniculata* Martius, Fam. Amaranthaceae (Brazilian ginseng) and *Rumex hymenosepalus* Torrey, Fam. Polygonaceae (Wild red desert ginseng or American wild red ginseng).

Ginseng is a member of one of the phylogenetically oldest plant families, having evolved in the Cretaceous period, some 65 to 100 million years ago, when the giant reptiles had just disappeared and the angiosperms, the flowering plants, were becoming established. Continental drift occurred as the earth evolved and the land masses separated producing for ginseng two important areas of speciation, North America and Indo-Malaysia. Fossil evidence indicates the occurrence of Araliaceous species in Alaska in the Upper Cretaceous period (over 65 million years ago) and the Palaeocene period (65-55 million years ago). Fossils of *Panax* species were also found in Colorado, dating from the Oligocene period some 38 million years ago. The bicentric generic distribution pattern prompted Hu (1978) to observe that genera with such separated distribution were considered to be of 'great antiquity' and therefore *Panax* species could be regarded as 'living fossils'.

True ginseng, *Panax ginseng* C.A. Meyer, is a small, inconspicuous, shade-loving, perennial shrub attaining a height of about 60 cm and belonging to the ivy family Araliaceae (Fig.1.). The generic name *Panax* was derived from the Greek 'παγ'and 'αχεομαι' meaning 'all-heal' or 'all-cure' and reflected the popular, traditional use of the plant as a panacea. The specific name ginseng or schinseng is a transliteration of the Chinese names 'Jin-chen', 'Jen-schen', 'Ren-shen', 'Schin-sen' or 'Schan-shen' (wild mountain ginseng) and relates to the anthropomorphic

Panax Ginseng

appearance of the subterranean parts of the plant, the vague resemblance of the mature roots to the human form. Cultivated or garden ginseng is known locally in China as 'Yuan-shen'. *P. ginseng* also grows in maritime areas of Siberia and in Manchuria, Korea and Japan.

The Chinese, the early Egyptians and the Hindus independently believed in their different ways that the world and all that was in it was constructed from a small number of basic indivisible units existing in harmony. In living beings it was believed that imbalance of such units led to ill health. Therefore the quality of life depended on the balance or imbalance of many factors and plants were sought as agents to correct such illnesses.

In ancient China the legendary sage and recluse Lao Tan or Lao-Tzu (The Old Master) reputedly founded the Taoist philosophy (ca. sixth century BC) outlining the laws of the natural universe which stated that good health and longevity depended on the quality of one's life, good quality being achieved by personal effort and high ethical standards. 'Tao' literally means 'The Way' or 'The Flow' and, in particular, the way of nature. Confucius or K'ung Fu-tse (551-479 BC), philosopher, social reformer and teacher, further developed the philosophy, propagating a creed known as 'The Way of Humanity' or 'Confucianism', a code of ethics advocating exemplary moral standards based on filial piety and brotherly respect. It was adopted as state orthodoxy during the Western Han Dynasty (ca. 298-238 BC). The Yin and Yang theory was developed concurrently with the Han Dynasty concepts of Confucianism (ca. 206 BC-24 AD).

The Yin and Yang theory alleged that good health depended on the balance of the material Yin and the

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metaphysical Yang, two ever-present contrary basic forces operating cyclically to produce change. Yin, meaning 'standstill', was passive and dark and thus included death, the darker aspects of life, the moon, the earth, night and darkness, water and damp, cold, etc. as well as other negative and feminine subjects; Yang, on the other hand, meaning 'motion', was active and light and therefore embraced life as well as the sunnier aspects of life including the sun itself, heaven, day, fire, heat, light, dryness, creation and other positive and masculine aspects. As sure as light changed to darkness and winter changed to spring so, it was argued, the ever-changing balance of Yin and Yang controlled all natural phenomena. Hence excess Yin, being cold, caused chills and colds and excess Yang, being hot, promoted fevers.

In association with Yin/Yang balance the Chinese also believed in the doctrine of the five elements, wood, fire, earth, metal and water; the five viscera, the heart (controls pulse and spirit), the lungs (control skin and the animal spirit or ghost), the liver (controls muscles and soul), the kidneys (control the bones and the will); and the spleen (controls the flesh and ideas) and the five flavours, salty hardening the pulse, bitter withering the skin, pungent knotting the muscles, sour toughening the flesh and sweet causing aches in the bones. The Five Element theory or Quinary (Table 1) was further extended to include the nutritious grains, fruits, vegetables and animals, as well as odours, climates, musical notes, etc. (Hou, 1978).

Table 1. The Quinary

Elements	wood	fire	earth	metal	water
Body	tendons	pulse	muscle	skin/hair	bones
Viscera	liver	heart	spleen/ pancreas	lungs	kidney/ bladder
Senses	eye	tongue	mouth	nose	ears
Flavours	sour	bitter	sweet	sharp	salty
Odours	rancid	scorched	fragrant	putrid	rotten
Energy	dry	hot	pungent	wet	cold
Emotions	anger	joy	sympathy	sadness	fear
Climate	wind	heat	humidity	dryness	cold
Seasons	spring	summer	late summer	autumn	winter
Points	east	south	centre	west	north
Planets	Jupiter	Mars	Saturn	Venus	Mercury
Fruits	peach	plum	apricot	chestnut	date
Animals	fowl	sheep	beef	horse	pig

Against this elaborate philosophical background the early Chinese medical schools considered ginseng as 'Spirit of the Earth' or 'Man-Essence', the essence or elixir of the earth crystallised in human form and responsible for the healing virtues of the plant. The underlying philosophy of Eastern medicine was, and still is, the treatment of the patient as a whole, not as an isolated disease condition, coupled with prophylaxis, that is, obeying the axiom that prevention is far better than cure. Indeed, in China, if the patient became ill the physician had failed. Therefore the medical texts of those times e.g. *Shen-nung Pen-ts'ao Ching* (ca. 200 AD) that listed some 365 plant drugs, *Ming-I Pieh-lu* (ca. 500 AD), *Chia-yu Pen-ts'ao* (1057 AD) and *Pen-ts'ao Kang-mu* (1596) that included nearly 1900 drugs of animal, vegetable and mineral origin, recommended ginseng as an excellent tonic medicine which could maintain the body in good health, induce rejuvenation and retard the inevitable process of ageing.

This was due to the restoration of Yang establishing the healthy Yin/Yang balance in the five visceral areas (heart, lungs, liver, kidney/bladder and spleen/ pancreas). Ginseng was therefore employed in the treatment of conditions such as defective memory, gastrointestinal disturbance and debility states. As the treatment of illness comprised the rebalancing of Yin/ Yang forces, the herbal plants were evaluated for their Yin or Yang properties. Thus Chinese ginseng, *P. ginseng*, a tonic medicine, was classified as having Yang properties and American ginseng, *P. quinquefolium* L., had Yin properties and was used to 'cool' the body systems and so treat 'hot' conditions such as fevers, sore throats and infections. In addition Chinese traditional medicine classified its herbs in three groups, mild, moderate and curative. Under such classification ginseng was considered a mild drug invigorating the body, strengthening the visceral organs, tranquillising the spirit, countering nervous debility, promoting resistance to infection, improving vision and increasing mental and physical performance.

During the Liang Dynasty (ca. 500 AD) the occurrence, harvesting, preservation and morphological characteristics of ginseng were described reputably by the wise physician T'ao Hung-ching (452-536 AD) and in the T'ang Dynasty (618-905 AD) ginseng was considered a royal plant. That ginseng was much valued is confirmed by the observation in the Sung Dynasty (926-1126 AD) that the price of ginseng was determined by its weight in silver. Not surprisingly, therefore, in Eastern medicine ginseng is a very important drug even today. Nevertheless such popularity resulted in overusage of the wild ginseng and there was a great shortage resulting in a decline in quality and problems of adulteration and substitution. Cultivation was not to be developed until some 500 years later.

In Chinese medicine ginseng was, and often still is, used in polypharmaceutical mixtures that were derived from accumulated experience and clinical

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trials. Many such old formulations are presented in the works of Harriman (1973), Hou (1978), Fulder (1993) and Reid (1995) and involve plants such as liquorice root, Chinese cinnamon or cassia bark, wild Chinese jujube or red date, atractylodes thistle root and Chinese atractylodes root, Chinese chives bulbs, creeping lilyturf root, ginger root, perilla leaf, Chinese magnolia vine fruit, figwort, tuckahoe or hoelen (a saprophytic basidiomycete fungus growing on the roots of certain conifers of the genera *Pinus* and *Cunninghamia*) and Russian mulberry root.

In traditional medicine the mixed herbs were, and usually are, taken as decoctions prepared by adding boiling water and boiling to a specified reduced volume. The action of the supporting herbal medicines may include one or more of the functions flavouring, restorative, tonic, curative or supplementary (giving measurable bulk). In addition the action of the supporting drugs may be positive or synergistic, so improving the action of the ginseng, or negative or antagonistic, cancelling some of the unwanted actions of the mixture. Although the effect of many ancient polypharmaceutical formulae can be rationally explained using modern phytochemical, pharmacological and medical knowledge, it is more likely that the original formulations were devised by trial and error rather than by application of ancient medical theories.

Early Western medicine developed independently and quite differently, having no obvious contact with the philosophy of the Far East although developed with some understanding of earlier Egyptian medicine (ca. 3000-1200 BC) and Assyrian medicine (ca. 1900-391 BC). The initial Greek concepts of holistic medicine propounded by Hippocrates (ca. 460-ca. 377 BC) formed a logical approach to clinical medicine. Unlike the Chinese who had performed little dissection or surgery and used common body organ names to describe areas of functional activity such as digestion, elimination, heat generation, etc., the Greeks based their medical ideas on the structure and functions of precise body organs discovered by the study of the anatomy of man and many other animal species by scholars such as Aristotle (384-322 BC) and his colleagues at the Academy and later at the Lyceum in Athens . Later it was replaced by the rigid theory devised by Galen (ca. 130-201 AD), the Greek physician to the Roman gladiators at Pergamon near Ephesus.

Galen's ideas included the early Pythagorean theory of the four elements (fire = hot+dry, air = hot+moist, earth = cold+dry, water = cold+moist), the Hippocratean concept of four humours or body fluids associated with distinct parts of the body (blood = hot+moist, yellow bile = hot+dry, phlegm = cold+moist, black bile = cold+dry) and his own theory of the four temperaments of man (melancholy, choleric, sanguine, phlegmatic). Illness was considered due to imbalance of these concepts and the aim of medical treatment was the return to homoeostasis or normality. Galen's dogmatic yet erroneous theory was taken seriously by later leaders of the medical profession although his own reputedly excellent practice was probably more due to empirical observation than application of his theory. Nevertheless the theory held sway well into the 18th century; it dominated many of the early dispensatories and pharmacopoeias and undoubtedly held up the progress of European medicine. Although Galen used a very wide range of plants from Europe and Asia, ginseng did not appear in any of the formularies and ginseng was not apparently classified in the Galenical style and therefore was not used.

As Galen's hypothesis was successfully challenged, it declined in importance and European medicine as practised by the physicians adopted the Paracelsian ideas of chemical medicine and was dominated in the 17th and 18th centuries by the so-called Humoralism of the Eclectics, the use of venesection (blood-letting), mercurial and antimonial purgatives, bitter bark (from South American *Cinchona* spp.) and opium, drastic treatments for already debilitated patients. Nevertheless the European apothecaries, who operated from shops and were the forerunners of today's pharmaceutical profession, did not usually employ such methods. Instead they used the polypharmaceutical admixtures of mainly plant drugs either as powders, infusions and decoctions or aqueous alcoholic tinctures and extracts. Close inspection of old prescription books and medical practice daybooks (1750-1900) coupled with modern insight into plant chemistry and pharmacology reveals that the formulations arrived at by empirical methods were probably effective in ameliorating the patients' conditions, although cures were usually not possible as disease states were poorly understood (Court, 1988, 1996a). Ginseng, however, has not appeared in any of the many old prescription books, drug lists and shop records that I have personally examined.

Although trade between Europe and China had commenced in the Eastern Han Dynasty (25-220 AD), no mention of ginseng appeared until ca. 1000 AD when Ibn Cordoba, a Moorish adventurer, returned to Spain with a cargo which included ginseng. After some initial enthusiasm, interest in the expensive ginseng rapidly declined. In 1294 Marco Polo returned to Europe with further supplies of ginseng and in 1616 Dutch traders also brought ginseng roots to Holland where some physicians employed it for the treatment of exhaustion and debility .The combination of the remoteness of the Far East, the high prices and the marked differences in the two medical philosophies however resulted in ginseng having little impact on European medicine (Hou, 1978).

Despite the cultivation of ginseng in China and Japan from ca. 1600 onwards and in Korea and North America from ca. 1750 onwards, it did not appear in

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the early European herbals and pharmacopoeias with the exception of the *Württemberg Pharmacopoeia*, 1741. Nevertheless Wienmann reported in 1757 that many European apothecaries kept ginseng although often only as a rarity. In Britain Tobias Smollett, surgeon and novelist (1721-1771), wrote in his final masterpiece *The Expedition of Humphrey Clinker* (1771) of a letter between Mathew Bramble and Dr. Lewis. Wrote Bramble:

> By your advice, I sent to London a few days ago for half a pound of ginzeng, though I doubt much, whether that which comes from America is equally efficacious with what is brought from the East Indies. Some years ago a friend of mine paid sixteen guineas for two ounces of it; and, in six months after, it was sold in the same shop five shillings the pound. In short we live in a vile world of fraud and sophistication.

This suggests that American and Eastern ginsengs were available in London in the late 18th century although there was doubt concerning quality.

In Theophilus Redwood's *Gray's Supplement to the Pharmacopoeia* published in London in 1848 reference to Ginseng mentions *Panax quinquefolium* (Linn.) and suggests China and North America as sources. According to Gray the root is cordial, alexiterial and aphrodisiac with a dose of 1 to 2 drachms (60 to 120 grains or 4 to 8 grams) administered by chewing, or slicing and preparation as a tea, and often confounded with 'nin sing'. A cordial was defined as a preparation possessing warm and stimulating properties, capable of exciting animal energies and generally given to elevate the spirits; an alexiterial was an antidote or preservative against contagion or poison and an aphrodisiac was then, as now, used to arouse sexual desire. In the same reference the botanist John Lindley (1799-1865) described ginseng thus:

> Root an agreeable bitter sweet, with some aromatic pungency; has a prodigious reputation among the Chinese as a stimulant and restorative, under the name of "Ginseng"; by Europeans and Americans considered nothing more than a demulcent approaching liquorice in its properties; this, however, requires further investigation, for we cannot believe that all the Chinese say, believe, and practise, is fabulous or imaginary.

Despite Lindley's remark ginseng was not listed in most of the materia medica or pharmacognosy textbooks published in the 19th century. In Flückiger and Hanbury's textbook (1879) American ginseng (*P. quinquefolium*) is very briefly described as a spindle shaped root which may occasionally be encountered as an adulterant of the North American drugs senega or rattlesnake root (*Polygala senega* L., fam. Polygalaceae), a stimulant and expectorant, and serpentaria or Virginian snakeroot rhizome (*Aristolochia serpentaria* L., fam. Aristolochiaceae), a local and general stimulant and tonic. There was no mention of the potential value of American ginseng itself.

Significantly American ginseng, not fitting readily into the established galenical ideas of the Western-trained medical profession, was traded to Hong Kong where there was great demand or exported to Europe rather than being used indigenously by settlers in the United States and Canada. Nevertheless the settlers had adopted American Indian drugs such as cascara bark, hamamelis leaf and seneca root but not ginseng. As early as 1704 the physician Michael Sarrasin, who had arrived in Quebec as a medical adviser on behalf of King Louis XIV, had encountered the little shrub *Panax quinquefolium* in forests near Quebec City. Samples sent to France in the belief that the roots were a reliable aphrodisiac proved ineffective. Today we know that the dominant chemical agent in the roots is a sedative (ginsenoside Rb_1) and that little of the stimulant agent (ginsenoside Rg_1) is present.

At the same time, on the other side of the world, a French Jesuit priest, Father Pierre Jartoux, a map-maker in northern China, discovered the medicinal virtues of ginseng by living among the indigenous Chinese people. Jartoux's 1713 report to the Royal Society in London evoked considerable interest because it suggested that ginseng might be found in areas of Canada where the mountainous, forested habitat closely resembled that in China. This stimulated Father Joseph Francis Lafitau, a Jesuit missionary amongst the native Canadian Iriquois tribe, to successfully seek out this wonder drug. He soon discovered that it was known in Iroquois medicine as 'garentoquen', a name referring to its man-like appearance and the Ojibwa tribe of North-Western America called it 'shte-na-bi-o-dzhi-bik' also meaning man-root'(Harriman, 1973), suggesting that the Doctrine of Signatures was employed. American ginseng was considered useful in the treatment of inward conditions such as stomach pains and ulcers, for prolonging life and as a general tonic.

Ginseng became an important article of Canadian commerce in the period 1720-1750, being gathered by all and sundry for export via Paris to China. Inevitably the quality of the roots gathered by the 'sang diggers', the itinerant harvesters, was extremely variable. No control was exerted over the age of the roots garnered, no rules were laid down concerning effective drying of the roots and no cultivation attempts were undertaken with the object of reseeding and conservation. Therefore the wild stocks were soon depleted. At the same time the Chinese complained about the quality of the extremely variable batches of ginseng that they were importing at much inflated prices and in America there were those who doubted the Chinese pharmacological claims. Vogel (1970), referring to ginseng in North America in the 18th and 19th centuries, noted that:

> Dr. Cullen...called ginseng nothing more than a very mild aromatic and denied that it had the aphrodisiac powers claimed for it by the Chinese. Also cautious was the view of Jacob Bigelow who held that the virtues of ginseng "do

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not appear, by any means, to justify the high estimation of it by the Chinese"... By 1852 Dr. Clapp reported that ginseng was "seldom employed in this country.".

Kreig in her book *Green Medicine* in 1964 reported of the 20th century

> "Ginseng today is not considered a commercially important drug plant, although it is the most expensive one listed in the suppliers' catalogues.

Inevitably the Canadian trade declined but, simultaneously, an American export trade developed as it was realised that ginseng grew wild in the forested areas of the north-eastern states and subsequently, during the period 1750-1890, ginseng was being gathered freely from the Atlantic seaboard to the Mississippi River and especially in the shady hardwood forests on the Allegheny and Appalachian Mountains as far south as the 35th parallel. Although the ginseng areas in America were much greater than those in Canada, it was obvious that supplies would deplete unless conservation measures were adopted. In 1870 Abraham Whisman of Boones Path, Virginia, was the first American to demonstrate the cultivation of ginseng but it was George Stanton, a retired New York tinsmith, who set up the first successful, commercial, Chinese ginseng farm in 1886. Realising that other attempts to cultivate ginseng had failed miserably, Stanton decided that he would attempt to mimic natural growth conditions. Using woodland soil for the ginseng beds, artificial shade that resembled the natural woodland shade conditions, adequate ventilation and drainage of the beds and fertiliser prepared from mulched forest leaves, he successfully grew crops of ginseng. Many others, who attempted to make a rapid fortune by cultivating ginseng roots, failed because they did not reproduce the natural conditions that the plant favoured and, in many cases, were not pleased patiently to cultivate a plant for up to 7 years, especially when facing problems of drought and disease. Cultivation, especially in Minnesota, Wisconsin, Michigan and Ohio, reached a peak in about 1920 and trade steadily declined in the 1930s until complete disruption by the Second World War in 1939.

The peak year for American ginseng export was 1862 when no less than 282.5 tonnes of dried roots collected from wild sources were traded to Canton and Hong Kong. About 68 tonnes were cultivated annually in the Depression period (1929-1934). Harriman (1973) reported that many of the ginseng farms became derelict in the 1930s and 1940s . The annual trade in ginseng post-First World War, mainly to Oriental markets, was about 75 tonnes. Sadly in 1973 *Panax quinquefolium* was listed in CITES (Convention on International Trade in Endangered Species) as a species in danger of extinction in the wild unless serious efforts were made to preserve and propagate the plants. Fortunately research involving this species has been instigated and continued, especially in the Far East, using carefully cultivated crops and indigenous American cultivation has increased steadily in Canada and the United States and more recently in Holland.

In Europe and America challenges to the Galenic ideas of medical practice came both from the traditional empirical school of herbal medicine which, as a result of trial and error, had been practised successfully by the wise women, tribal doctors, travelling quacks etc. and from the emerging school of medicinal chemistry (chemical as opposed to herbal medicine). Greater advances in the understanding of chemistry from the 18th century onwards and the new science of pharmacology (the action of chemical entities on living systems) from the 19th century onwards have produced the modern system of rational medicine where cause and effect are related. Therefore Western medicine is today mainly allopathic, using well defined natural or synthetic chemical substances for the suppression of symptoms or the treatment of specific and demonstrable pharmacological phenomena. Many of the new allopathic synthetic medicines have been dramatically effective in the battle against life-threatening diseases e.g. the sulphonamides and synthetic penicillins versus pneumonia and other bacterial infections.

Unfortunately, despite the indisputable triumph of modern medicines in producing an extended, healthy and useful lifespan, there have been several well advertised incidents of dramatic and damaging side-effects due to synthetic drugs e.g. thalidomide, neomycin, Opren, Valium, etc. There are also problems due to the gradually developing resistance of some invading organisms to allopathic medicines; antibiotic and antimalarial drug resistances are typical examples of conditions caused by the injudicious use of modern medicines. As a result of the adverse publicity, the use of herbal medicines worldwide has undergone a renaissance prompted by a revolt against synthetic allopathic medicines, partly because of the alleged side-effects and partly in the widespread but erroneous belief that natural products must be safer to use. Neither view is totally correct and in today's society the consumer does require products, allopathic or herbal, that are dependable.

Understanding ginseng has produced a clash between very different philosophies of medicine but the public interest in oriental and herbal medicines and the need to find new and effective treatments for many troublesome conditions, in particular stress states, has stimulated research efforts worldwide.

In the early 20th century ginseng was usually only required by the scattered Chinese communities worldwide and therefore was rarely found in the pharmaceutical wholesalers' catalogues or pharmacognosy textbooks and seldom encountered in the community pharmacy. Yet by the 1970s ginseng was appearing on the pharmacy and drugstore shelves and in the textbooks and pharmacopoeias. Today the

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market for ginseng in Europe and America is considerable. For example, in 1994 the United States Medicinal Herb Import Statistics revealed that 496.59 tonnes of cultivated ginseng roots valued at about $6,721,522 and 28.84 tonnes of wild ginseng roots valued at about $319,317 were imported. In the reverse direction about 1088.57 tonnes of American ginseng roots valued at about $76,000,000 were exported to the Orient where *P. quinquefolium* roots are valued in anti-ageing preparations. Sales of ginseng products, which are regarded as food supplements not required to meet the stringent safety and efficacy standards of the Food and Drug Administration, exceed $300,000,000 annually in the United States. World production of ginseng was estimated as 3200 tonnes in 1983 and had more than doubled within a decade and continued to rise. Reports and advertisements for commercial ginseng and ginseng products also appear prominently and abundantly on the Internet and World Wide Web. As a result of such commercial demand, much research is now in progress and a very large number of publications have appeared during the past three decades including some 4000 research publications, many patent applications, several useful books (Harriman, S., 1973; Dixon, P.,1976; Hou, J.P., 1978; Fulder, S., 1980, 1993 and 1996) and frequent reviews (Sonnenborn, 1987; Baldwin et al., 1986; Court, 1986, 1996b; Tang and Eisenbrand, 1992).

The understanding of ginseng today is consequent on the rapid changes in chemical technology. During the past 40 years the development of chromatography (thin layer, gas and high performance liquid techniques) coupled with spectrometric methods (ultraviolet, infrared and mass) have permitted our comprehension of the wide range of glycosides and other compounds occurring in *Panax* spp. Such techniques have also permitted the preparation of the carefully standardised products necessary for meaningful clinical trials. Consequent on this work it was quickly realised that most of the problems of the past were due to the belief that all ginsengs were the same. The different species demonstrate different qualitative and quantitative chemical compositions and wild and cultivated plants of the same species may vary considerably.

There are about nine *Panax* species, four of which are important viz. *P. ginseng* C.A. Meyer (Chinese and Korean), *P. quinquefolium* L. (American), *P. notoginseng* (Burk.) F.H. Chen (Sanchi) and *P. japonicum* C.A. Meyer (Japanese). Red and white ginsengs are frequently mentioned; red ginseng is obtained by heat treatment of the roots and white ginseng comprises the normal air-dried roots.

From these ginsengs about 100 glycosides based on principally triterpenoid dammarane structures with glycosidally linked sugars such as arabinose, fucose, galactose, glucose, rhamnose and xylose have been obtained. A number of polysaccharides including glycans and heteroglycans incorporating amines and acids with molecular weights up to 1,900,000 have been reported. An interesting group of some 20 polyacetylenic compounds (epoxides of heptadecane) have also been found. As cultivation of ginseng is difficult, being expensive and time-consuming, tissue culture methods have been developed and can now be employed to yield ginseng compounds under artificial conditions on a com-mercial scale.

Current pharmacological and clinical research indicates that ginseng can strengthen the debilitated body, stimulate immune reactions, aid recuperation and improve the quality of life and is thus a tonic particularly useful for the sick and the aged. Ginseng has also been used to improve memory and intellectual skills in people of all ages. Other workers have shewn that ginseng is useful as an anti-stress agent, countering stresses due to heat variation, physical strain, disease states and toxic substances. Recent publications also suggest value in the treatment of tumours, in countering alcoholism and morphine tolerance, in opposing radiation damage by stimulating DNA strand repair and as a scavenger of the highly reactive oxygen free radicals associated with ageing.

Ginseng provides a slow acting medication with low toxicity, a fairly large oral dosage and very few readily reversible side-effects. *Panax ginseng* is a very interesting plant and, despite the fact that more clinical research is necessary, it would seem that the history of this insignificant little plant still has many more secrets to reveal.

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Revisiting Counter Practice amid Pharmacy and Medical Reform in 19th-century Britain[1]

J.K. Crellin

First, I want to acknowledge David Cowen's oft-quoted 1969 paper, 'Liberty, Laissez-faire and Licensure in Nineteenth Century Britain.'[2] In heralding various studies bearing on professionalism in nineteenth-century British medicine and pharmacy, Cowen explored how the prevailing doctrine of free trade and fear of monopolies made it difficult to legislate regulation of the health professions. In drawing on both medicine and pharmacy, he noted that 'since pharmacy was considered a trade, and chemists and druggists tradesmen, [the 1852 Pharmacy Act] represents a more significant departure from hands-off doctrine [free-trade] than either the Apothecaries Act of 1815 or the Medical Act of 1858'.[3]

Key features of this 1852 Act—in fact, a watered-down version of the original Bill—were the establishment (under the auspices of the Pharmaceutical Society) of a voluntary register, examinations, protection of the title 'Pharmaceutical Chemist' for those registered, and directives for by-laws, examinations and penalties.[4] Recently, S.W.F. Holloway, in a detailed account of the Act, elaborates on the difficulties in bringing it into being.[5] Aside from free-trade issues, there was strong opposition from general medical practitioners who were frustrated by the 'counter practice' (the provision of medical advice and medicines) of chemists and druggists.[6] Practitioners said this competition reduced their own income. They feared that a regulated body of chemists and druggists—educated, examined and licensed—would provide even greater competition, perhaps 'ten-fold', in counter practice and the treatment of disease.[7]

In this presentation, I revisit counter practice with three reasons. First to suggest that the counter practice of chemists and druggists—which helped to shape self-care and its social role—transcended its use as a weapon in the interprofessional guerilla warfare between chemists and druggists and medical practitioners. Secondly, to deepen our appreciation of why the founders of the Pharmaceutical Society, Jacob Bell in particular, fought for the 1852 legislation to regulate pharmacy. This was despite Bell's Quaker philosophy in which he emphasised that uplifting the moral character of chemists and druggists was perhaps a more appropriate way than legislation to improve pharmacy. My third reason for looking at counter practice is to suggest that the nineteenth-century scene helps to sharpen questions about the current role of pharmacists in the sale of over-the-counter natural health products.

In considering the first two reasons, I will also comment on Holloway's chastisement of certain historians for their views on chemists and druggists. He writes of 'the work of modern medical historians', who consistently refer to the chemist and druggist as "'unorthodox', or 'irregular', or 'para-medical', or 'fringe' practitioner" or "even as 'quack', lumped together with folk-healers, medical botanists, wise-women, midwives, bone-setters, and mountebanks".[8] He adds that 'the illiterate, bungling, positively dangerous, chemist and druggist is a stereotype invented by interested parties in the nineteenth century and perpetuated by uncritical historians'.[9]

Counter practice

The basic issue behind the general medical practitioner versus chemist and druggist confrontation over counter practice has been outlined by various historians, notably Irvine Loudon. He has shown that the rising number of general practitioners, in the first half of the nineteenth century, commonly depended on income from operating their own shops and dispensing their own medicines to supplement meagre medical fees. Loudon has documented, too, the rapid increase in the numbers of chemists and druggists and how their counter practice—and house calls by some—did undermine the profits of general practitioners.[10] The intense feelings expressed at the time are only partly reflected in physicians' opinions that the ignorance of chemists and druggists about the nature and treatment of disease disqualified them from offering advice.

In looking at the chemist and druggist scene and the 1852 Pharmacy Act, Holloway argues that 'counter practice was not an incursion into the professional territory of the physician' but characteristic of specialist retailing in early Victorian Britain when retailers possessed special skills and knowledge, offered information, advice and guidance on the goods and services they provided, and produced goods to meet the requirements of individual customers. 'Counter prescribing was characteristic of all specialist retailing: it was not a peculiarity of the chemist and druggist.'[11]

Although I do not disagree with Holloway's broad 'defence' of chemists and druggists and their counter practice, there remain many questions about its scope and whether it had recognized boundaries. After all, self-medication was very diversified at the time and

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was probably more bewildering than nowadays. Did both sides—general practitioners and chemists and druggists—single out certain negative or positive aspects of counter practice to bolster their points of view? Was there a real need to bring in some legislation to limit medical practice by chemists and druggists, or could this be done through self regulation? What was viewed as acceptable first-aid? Did chemists and druggists consider themselves to have more responsibilities to customers than the patent medicine vendors? How did chemists and druggists respond to new influences in health care such as botanical medicine? Was there at least some agreement on the line to be drawn between self-care and the need for skilled medical attention?

Unfortunately, in the absence of much contemporary comment on self-care, information to approach these questions is more indirect than direct. One can start with Bell's efforts to define the proper scope of counter practice. In 1844 he wrote that while the chemist and druggist

> may be quite competent to administer an aperient draught...he would not be justified in undertaking to manage a case of enteritis. He may be competent to prepare a rhubarb mixture, and calculate the dose with which he may relieve a patient whose bowels are slightly relaxed; but if he attempt to cure dysentery, cholera or nephritis, he may do more harm than good.[12]

It seems likely that Bell believed this limited scope could be justifiably expanded in certain circumstances, such as wherever 'the poorer classes are more dependent on the chemist for necessity' and otherwise would 'be deprived of the benefit of medicine altogether.'[13] The tenor of Bell's comments as well as on proprietary medicines (see below) suggest that it was not so much what was sold, but how it was sold that mattered. The social role of counter prescribing was recognized by others, including some physicians. For example, Garrett Dillon, in writing (1852) that he did not think the practice was so injurious to the public as often stated, added:

> It is a great convenience to the humble classes, who cannot afford to call in a qualified practitioner upon any little alarm or derangement of health, occasioned, perhaps, by a change of weather or irregularity in eating or drinking, of a temporary nature, and easily corrected by a dose or two of simple medicine. I am equally certain that this 'counter practice' of the chemist relieves medical men of a great deal of profitless trouble.[14]

Medicine chests: orthodox medicine, homoeopathy, family recipes

The prudent roles for self-care reflected in the comments of Bell and Dillon can also be discerned in much nineteenth-century domestic medicine literature. Here, only the companion guides to domestic medicine chests, and the issues they open up, will be noticed, for both the sale of chests and replenishing of contents were a significant part of the counter practice of chemists and druggists. The contents of the chests mirrored orthodox medicine, and many guides made clear that self-care had limits and would not replace practitioners.[15] In fact, authorship of many guides—including the commonest published by Cox—was by medical practitioners, albeit commonly anonymously (e.g. a 'Member of the Royal College of Surgeons').[16] In terms of orthodoxy, it is also noteworthy that the guide by John Savory—a prominent chemist and druggist in London—used another of his affiliations on the title page, namely 'Member of the Society of Apothecaries, London.'[17] Other guides, perhaps compiled by chemist and druggist proprietors, often stressed the need to rely on medical authority and that powerful drugs in the chests—e.g. 'Calomel, Emetic Tartar, Antimonial Powder, &c.'—were there as much for the convenience of physicians on house calls.[18]

Although the bulk of nineteenth-century chests reflected orthodox practice, homoeopathic chests were also common. Many chests included companion booklet guides, such as the Homoeopathic Guide for Family Use, in a pocket size 'chest' sold by Leath and Woodcott, Homoeopathic Chemists of Leamington.[19] Unfortunately, the popularity and extent of their usage—amid much trenchant criticism from the medical profession—needs study, but most likely it was significant.[20]

Family medicines. While the chests reflected careful and safe use of orthodox treatments, some of the contents, as well as items discussed in many chest guides, were commonly viewed as 'family medicines'. In fact, by the mid-1800s many chemists and druggists were advertising themselves as 'family' druggists or 'family chemists, terms that, in one variation or another, persisted well into the twentieth century. Although 'family medicines' was a somewhat elastic term, it indicated the use of mild remedies and nutritious preparations for the sick and for invalids. Often, during the 1800s, chemists and druggists advertised 'family' or 'domestic' articles, such as the following examples:[21]

Starch/cereal products: Genuine Bermuda Arrow Root (the finest imported); Jamaica Arrow Root; Tous les Mois, or Canna Root; Tapioca; Sago; Pearl Barley.

Mild laxatives: Rochelle Salts, Manna, Lenitive Electuary, Turkey Rhubarb Root and Powder.

Stomach products: Carbonate of Magnesia, Calcined Magnesia.

Tonics/Stimulants: Sarsaparilla Root (Jamaica), Ginger Root and Powder, Hoffman's Anodyne, Sal Volatile.

Clearly an overlap existed between family medicines and grocery items. Perhaps it is not surprising that many chemists and druggists had a general grocery section in their businesses; after all many of the items went into preparing 'family recipes', especially 'for the sick room'.[22] Chest guides often included the latter. For instance, John

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Savory's *A Companion to the Medicine Chest* (1852) had a section, 'Cookery for the sick'. Items listed included: 'Panada made in five minutes', beef tea, various caudles, French milk porridge, sago, sago milk, and asses' milk.[23] Savory's book is also of interest for reflecting the growing availability through chemists and druggists of commercial 'equipment' in self-care. In a section, 'Medical Apparatus in Domestic Use', he describes enema pumps and the Kheesah or Indian Flesh Glove. Later editions (e.g. 1886) added inhalers, spray producers, and eye and ear douches. All such self-care items were sold alongside a vast range of combs, brushes, toiletries, perfumes and hygiene items.

The title 'family chemist and druggist' also reflected the dispensing of customers' own 'family recipes'. As was stated in 1844:

> Many persons...resort to their own nostrums and family receipts, and in the application of these remedies the Chemist is sometimes consulted, not as a medical man, but as a person who, from his constant manipulation of medicines, is supposed to know something about their effects.[24]

It is appropriate to remember that, at this time, great importance was attached to chemists and druggists having a wide knowledge of formulae, and how to prepare effective and elegant preparations. The very heart of pharmacy depended on knowing the formulae of pharmacopoeial preparations, of physicians' prescriptions, of family medicinal recipes and of a host of domestic items, e.g. harness paste, baking powder, pot-pourri, bear's grease, anchovy paste, marking ink, marine glue, pounce, eau-de-cologne, lavender water, cold cream, violet powder, permanent and blue inks, Hungary water, mushrooms, ketchup, and white cement (made with oyster shells and albumen).[25]

Proprietary (patent) medicines

Space only allows the briefest of notes on the bête-noire and best known aspect of the counter practice debate, proprietary medicines, seen by many as the 'evil' of quackery. In the free-for-all market conditions, problems of safety and fraud clearly existed, though it is inappropriate to categorize all such preparations as 'evil'. By the nineteenth century, many products with generations of usage had become household names and were generally recognized to be compounded from 'orthodox' medications. Moreover, the credibility and widespread acceptance of many was linked to the 'pedigree' of a physician's name (e.g. Dr. James' Fever Powder) and by 'official' government tax stamps affixed to containers, which in fact offered no guarantee of safety and efficacy. Given all this, at least some chemists and druggists (unlike many colleagues and patent medicine vendors) may well have promoted proprietary medicines with restraint. For instance, an advertising broadsheet from James Landy, a Norwich chemist and druggist (c. 1830), only included 27 proprietary medicines out of 371 items. One might speculate that Landy was in sympathy with the views of Jacob Bell who wrote in 1842: "The sale of patent or proprietary medicines, which is generally conjoined with retail business, is a department which ought not to be made prominent."[26] Bell also stated a basic ethical issue for chemists and druggists:

> The retail Chemist...is not responsible for the efficacy of these patent medicines, or the accuracy of the panegyrics; he is not supposed to be acquainted with their composition, or to give any opinion in the matter. He is only the agent, and the purchaser buys the articles on his own judgment, and at his own risk. It should be understood, however, that by pushing this kind of trade, and advertising or recommending secret medicines to any great extent the Druggist approximates, in the same proportion to another class, namely, the patent medicine vendors, who are a distinct body.[27]

Boundaries

I hope enough has been said to indicate that counter practice operated at different levels, and that much of it was quite safe and orthodox. Moreover, even some physicians who seem to have been generally unhappy with self-medication could accept the use of, for example, 'rhubarb, magnesia and manna'.[28]

But how does this help with interpreting the debate over counter practice? Holloway is correct in indicating that, as quoted above, the preparation and sale of remedies was part of a shopkeeper's role, especially in catering to the needs of individual customers. Yet, many charges of inappropriate counter practice were seemingly justified. Jacob Bell and other founders of the Pharmaceutical Society referred to concerns over counter practice as they argued for the importance of the separation of medicine and pharmacy. A constant refrain was that chemists and druggists, as a body, did not wish to become medical practitioners.

In the early years of the Pharmaceutical Society, Bell felt the boundary issue between chemists and druggists and medical practitioners—as well as boundaries between patent medicine sellers and others[29] —could be dealt with by raising the 'moral and intellectual character of Druggists', so that they would be

> less likely...to encroach on the other offices of the [medical] profession. This indirect system of correcting abuses will be much more effectual than any compulsory law.[30]

However, within a few years, Bell put his heart and soul into enacting the 1852 Pharmacy Act, especially its provision of education for all those wishing to be registered. Although his disappointment at the weakening of the original Bill—resulting from many factors—has often been noted, the compromise was compatible with his Quaker philosophy of improvement through personal moral values, even while recognizing that this was often insufficient;[31]

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entry into the profession through formal education was also necessary.[32] Moreover, Bell could see the Act as groundwork for the clearer separation of pharmaceutical and medical practice; it seems clear that he believed that the Act would help both to establish firmly the socially necessary role of chemists and druggists in counter practice, and to settle boundary disputes.

Chemists and druggists and the role of counter practice

What about all the harsh words from physicians about chemists and druggists, harsh words which Holloway says have been uncritically appropriated by some historians? Holloway's critique has not convinced everyone. Ann Digby, for instance in her summary of Holloway, states:

> Holloway has made the interesting, but not wholly convincing case, that contrary to the statements of rival GPs and apothecaries there was nothing unorthodox, irregular or fringe about chemists: their pharmacy was based on the London, Edinburgh and Dublin Pharmacopoeias, as was the prescriptions of physicians, surgeons and apothecaries; and the apprenticeship served by chemists conferred expertise. Chemists had standing in their local community, shown by their public offices, and thus were in no sense marginal.[33]

Unfortunately, Digby does not elaborate on why she is not wholly convinced. Although she seemingly accepts key features of Holloway's argument, perhaps she feels that much more data is needed. For instance, although the number of chemists and druggists who quickly joined the new Pharmaceutical Society is noteworthy, we have a poor appreciation of the relative numbers of the London and rural 'elite' chemists and druggists compared with 'poor corner ones'.[34] Nor do we have an understanding of how many recognized their limited experience and knowledge and acted accordingly. Many, too, must have been influenced by their upbringing in a social climate of religious teachings on morality, of expectations of appropriate manners between equals and between those above and below one in social standing, as well as a sense of what it was to be honourable.[35] Perhaps, too, Digby sees as a real problem the 'bad apples', who undoubtedly existed among a diverse group of chemists and druggists—some of whom were difficult to distinguish from grocers, oilmen and colourmen, and patent medicine vendors. Of course, it only took a few 'bad apples' to support the views of general practitioners who wished to blacken the group as a whole.[36]

Amidst conflicting interpretations, Holloway is surely correct in saying that chemists and druggists as a group should not be stereotyped negatively. However, is his 'attack' on certain historians overstated? I. Loudon, for instance, does make it clear that he is writing about the way irregular practice was 'perceived by regular practitioners'.[37] And, H. Marland describes chemists and druggists as 'para-medical', which is not to be read as fringe, although there is some ambiguity in places when she refers to 'fringe groups', and she does indicate that some chemists and druggists branched into 'medical galvanism, herbalism, phrenology, or midwifery, stocked extensive ranges of surgical appliances or spa waters, or specialized in the concocting and dispensing of homoeopathic or botanic preparations'.[38] However, much of this fitted into the broad framework of self-care with all of its nineteenth-century eclecticism; self-care was open to many 'reform' movements—from botanical sects to vegetarianism—that reflected different world views. In fact, the term physical puritanism was coined to cover a person's overall sympathy with medical botany, hydropathy, homoeopathy, popular physiology, phrenology, mesmerism, vegetarianism, and teetotalism.[39] The counter-practice issue was not so much what preparations were sold by chemists and druggists, but how they were sold, an issue raised by Bell as already noted.

Given all this, perhaps Holloway protests too loudly. In looking at a time period when even Bell acknowledged that problems over counter practice existed, maybe Holloway sees the cup half full, whereas historians he criticises see it half empty? Although the story of counter practice embraces many strands (from questionable patent medicines to family recipes), Holloway seems to lump them together in a way that supports his overall views on trends in self care. He writes that

> between 1794 and 1858 the medical reform movement changed the meaning of self-medication. In the seventeenth and eighteenth centuries there was little antagonism between medical self-help and orthodox medicine. It was the growing professionalisation of medicine that made self-medication 'unorthodox' and 'unprofessional.' The medicine of the laity became 'quack' medicine, i.e. medicine beyond the control of the qualified. The medical reformers during the exclusionist era of early Victorian professionalisation succeeded in converting the people's medicine into 'fringe' medicine. The continuity of lay medicine became, therefore, an expression of popular resistance to the cultural aggression of the professionalisation of medicine.[40]

These views seem to be predicated by Holloway's opinion—as I read him—that the folk tradition (his lay medicine) is a constant thread, at least through family recipes. Although the persistence of long-standing beliefs (e.g. magic and certain herbs) and of significant pockets of 'resistance' to allopathic medicine can be readily identified, Holloway seemingly ignores that self-care constantly changes as it melds with new ideas and practices. In this respect, chemists and druggists were facilitators of change. They brought together under one roof an eclectic mix of family recipes, long-standing orthodox medications, patent medicines with national, regional and local circulation, botanical and homoeopathic medicines, and new lines of medical apparatus for the home.[42]

Counter practice had a role that transcended the

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way it was used as scaremongering by general practitioners, especially among those chemists and druggists who upheld the professional responsibilities promoted by Jacob Bell. In fact, the views of general practitioners—that educated, examined and licensed chemists and druggists would become a bigger force in the medical market-place—turned out to be generally valid. Much evidence suggests that chemists and druggists found an appropriate social role in the service of self-care amid its various developments in the nineteenth century. It is surely an oversimplification to say, as did Holloway in the above quote, that lay medicine was merely an expression of popular resistance to medicine. Laissez-faire persisted, to return to David Cowen's theme, but many chemists and druggists helped to moderate it as they combined business with a new sense of professionalism.[43] Moreover, the eclecticism of chemists and druggists and their social role in self-care must have contributed to what Porter sees as a nineteenth-century shift of quackery into 'somewhat of a backwater' compared with its innovative eighteenth-century role.[44]

In closing, a comment on what I see to be parallels between the situation I have described and that of today when pharmacies have added new lines of over-the-counter products in the form of herbal medicines and dietary supplements. Like their nineteenth-century predecessors, pharmacists cater to two world views, two cultures. One culture represents those who wish to change their health care to 'a better and more natural way', and the other comprises those who believe that effective health care must continue to rest on a scientific basis. Many questions arise such as whether, because of their professional background, pharmacists are validating products just by selling them.[45] Another is whether or not they are, inappropriately, offering a better service than, say, salespersons in general health food stores.[46] At present, many consider that pharmacists are selling the products along the lines of Jacob Bell's concerns that the pharmacist is the 'agent, and the purchaser buys the articles on his own judgment, and at his own risk'. Nowadays, with a long tradition of professionalism, pharmacy in Britain and elsewhere has a responsibility to examine its professional values in relation to natural health products.

References and Notes

1. A presentation delivered on May 5, 1999 at the American Institute of the History of Pharmacy symposium to honour the 90th birthday of David L. Cowen. Also to be published in: Gregory J. Higby and Elaine C. Stroud, eds., *Apothecaries and theDrug Trade: Essays in Celebration of the Work of David L. Cowen.* Madison,WI: American Institute of the History of Pharmacy.
2. Cowen, D.L. Bull Hist Med 1969; 43: 30-40.
3. Ibid, p. 32.
4. A convenient source for the Act is Pharm J and Trans 1852-3; 12: 3-5.
5. Holloway S.W.F. *Royal Pharmaceutical Society of Great Britain 1841-1991: a political and social history.* London: Pharmaceutical Press, 1991, chapter 2.
6. 'Counter prescribing', seemingly a narrower term, was also widely used. However, it implied the supply of any medication without the authority of the physician.
7. 'Ten-fold' was just one estimate. See Bottle A. The Pharmacy Bill. Lancet 1852; 1: 457.
8. Reference 5, p. 50, citing H. Marland and I. Loudon.
9. Reference 5, p. 67, citing R.G. Hodgkinson and H. Marland.
10. E.g. Loudon I. Medical Practitioners 1750-1850 and the Period of Medical Reform in Britain. In Wear A. (ed.) *Medicine in Society. Historical Essays.* Cambridge: Cambridge University Press, 1992, pp. 219-247. Also, his A Doctor's Cash Book: the Economy of General Practice in the 1830s. Med Hist 1983; 27: 249-268.
11. Reference 5, pp. 175-76.
12. Bell J. Counter Practice. Pharm J and Trans 1844-45; 4: 245-251(247).
13. General Observations by the Editor. Pharm J and Trans 1841-42; 1: 35-43 (43).
14. The Pharmacy Bill. Lancet 1852;1: 482-483.
15. For the subject of orthodoxy, see Crellin J.K. Domestic Medicine Chests: Microcosms of 18th and 19th century Medical Practice. Pharm in Hist 1979; 21: 122-131; Young A.M. *Antique Medicine Chests.* London: Vernier Press, 1994.
16. The commonest, published by Cox, was noted in 1828 to be "mostly used by country druggists as [Mrs. Cox's] situation close to the two most frequented hospitals in London [Guy's and St. Thomas'] generally introduced it to the young medical men [from] the country." Gray S, *Supplement to the Pharmacopoeia.* London: Underwood, 1828, pp. 490-491. [Cox's] *Companion to the Medicine Chest, with Plain Rules for Taking the Medicines in the Cure of Diseases.* London: E. Cox & Son. The 5th edition appeared in 1815; and the 55th in 1896. Changes were minimal and the term 'printing' is more appropriate than edition.
17. E.g. *A Compendium of Domestic Medicine: and Companion to the Medicine Chest.* London: Churchill, 1852.
18. E.g. Index of the *Portable Dispensary Containing Directions for the Proper Application of the Medicines Contained Therein.* Nottingham: Burbage and Stretton, 1801, p. A2.
19. *The Homeopathic Guide for Family Use Carefully Abridged from the Homeopathic Domestic Medicine (last edition) by Dr. Laurie.* London: Leath & Ross, n.d.
20. It is difficult to say how many chemists and druggists sold homoeopathic preparations without seeing themselves as 'homoeopathic chemists'. Cf. the small number of homoeopathic suppliers who were chemists in Bristol in 1851-52, Brown PS. The providers of medical treatment in mid-nineteenth-century Bristol. Med Hist 1980; 24: 287-314.
21. Taken from a twelve page pamphlet, *Ellis's Catalogue of Drugs, The Retail Prices, &c, Forming a Complete Modern Dispensatory and Companion to the Medicine Chest with a List of Family Articles, Perfumery, Proprietary Medicines, etc., &c, &c, &c*, William Ellis, Dispensing and Family Chemist, Member of the Pharmaceutical Society, 5 Frederick Place, Old Kent Road, London, c. 1850. Many similar lists exist from other chemists and druggists.
22. 'In many towns the Druggists invariably fitted up one side of their shops with grocery and spices, while, on the other they carry on the business of Dispensing Druggists'. On the Professional Character of the Pharmaceutical Chemist. Pharm J and Trans 1842-43; 2: 1-7.
23. Savory J. *A Compendium of Domestic Medicine and Companion to the Medicine Chest.* London: Churchill, 1852, pp. 304-314.
24. Bell J. Counter Prescribing. Reference 12, p. 249.

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25. Items listed were prepared in one Tenterden shop in the 1830s: Roberts H.V. The eighteenth century pharmacy at 60 High Street, Tenterden, Kent. Pharm Hist 1998; 28(3): 35-42. Recipes for such types of products appeared in many volumes. Particularly successful was Beasley H. *The Druggists' General Receipt Book Comprising a Copious Veterinary Formulary: Numerous Recipes in Patient and Proprietary Medicines.* London, 1895 (10th edn). Other examples exist, see Crellin J.K. Pharmacies as General Stores in the 19th Century. Pharm Hist 1979; 9(1): 5-6; Richardson K.D. A Book of Recipes. ibid, 1990; 20(1): 6-8.

26. Bell J. On the Professional Character of the Pharmaceutical Chemist. Pharm J and Trans 1842-43; 2: 1-7 (2, emphasis added). See also for dilemmas in counter practice, The Character of Chemists and Druggists. Pharm J and Trans 1845-46; 5: 193-197.

27. Bell J. Reference. 26, p. 3.

28. E.g. Report from the Select Committee on Pharmacy Bill. House of Commons, 1852, p.153. (Marshall Hall evidence.)

29. See Bell J. and Redwood T. *Historical Sketch of the Progress of Pharmacy in Great Britain.* London: Pharmaceutical Society of Great Britain, 1886, pp. 119-122.

30. General Observations by the Editor. Pharm J and Trans 1841-42; 1: 75-80(77). See also, Morson A. *Operative Chemist.* Amsterdam: Rodopi, 1997, especially pp. 166-208.
Perhaps Bell recognized that demarcating boundaries was as much a matter of medical theory and social boundaries. See Brown P.S. Social Context and Medical Theory in the Demarcation of Nineteenth-Century Boundaries. In Bynum W.F. and Porter R. *Medical Fringe and Medical Orthodoxy 1750-1850.* London: Croom Helm, 1987, pp. 216-233.

31. For example of comment on disappointment, Earles M.P. A History of the Society. Pharm J 1991; 246 (Supplement April 27): S2-S17. A good sense of the issues that defeated, in part, the proponents of free trade and opponents of the 1852 Act can be gained from the Select Committee Report, Reference 28. To be noted are current trends to reform in general (from burial to vaccination acts), the ease with which anyone could open a 'pharmacy', poor quality drugs (often rampant adulteration), inaccuracies in the dispensing of medicines, and concerns over the ready availability of poisons.

32. See various cross examinations by Bell in Select Committee, Reference 28, e.g. p. 153 (examination of Marshall Hall).

33. Digby A. *Making a Medical Living. Doctors and Patients in the English Market for Medicine 1720-1911.* Cambridge: Cambridge University Press, 1994, pp. 31-32.

34. Within a year of its 1841 foundation there was a voluntary membership of 1658 members and 2313 associates, apprentices. See Select Committee, Reference 28, p. 56.

35. For an example of a young chemist and druggist who was 'aware of the limitations of his skill and knowledge and...deferred to qualified practitioners accordingly,' see Clement M. Physical Puritanism and Religious Dissent: The case of John Young (1820-1904), Sunderland Chemist and Druggist and Methodist lay preacher. Soc Hist Med 1998; 11: 197-212. The role of manners or etiquette has been explored more for medicine (e.g. Fissell M.E. Innocent and Honorable Bribes: Medical Manners in Eighteenth-Century Britain. In Baker R., Porter D., Porter R. (eds.). *The Codification of Medical Morality.* Amsterdam: Kluwer, 1993, pp. 19-45. However, advice for apprentices in the nineteenth century contained much on behaviour. An interesting source is Lucas, James. *A Candid Inquiry into the Education, Qualifications, and Offices of a Surgeon Apothecary.* Bath: Hazand, 1800. Although written for practitioners, there is much on how apprentices should behave in connection with pharmacy, and the chapter on the arrangement of an Apothecary's Shop is also written for the druggist.
The concept of honour has also been written about in terms of professions in general and of medicine, but it seems to be quite implicit in the writings of Jacob Bell. For the 'culture of honour' in the American professions, but also relevant to the other side of the Atlantic, see Haber S. *Authority and Honor in the American Professions, 1750-1900.* Chicago: University of Chicago, 1991. Also, Nye R.A. Medicine and Science as Masculine 'Fields of Honor.' Osiris 1997;.12: 60-79.

36. The readiness to extrapolate from single cases has always been relatively common. For one example, see a Lancet account (1853; 1: 432-433) of a case of two medical 'practitioners' and a 'druggist' procuring 'criminal abortion' that ends with the following:

> Let those who lightly talk of 'free trade in medicine,' who encourage homeopathists, mesmerists, Coffinites, *practising druggists* [emphasis added], *et id genus omne*, reflect upon the consequences to society. They are directly fostering fraud, nursing iniquity, and social crimes in a Christian country, such as we are accustomed to denounce as the peculiar disgrace of barbarous and heathen nations.

37. Loudun I. In: The Vile Race of Quacks with which this country is infected.' In Bynum W.F., Porter R. (eds.). *Medical Fringe & Medical Orthodoxy 1750-1850.* London: Croom Helm, pp. 106-128.

38. The Medical Activities of Mid-Nineteenth-Century Chemists and Druggists, with Special Reference to Wakefield and Huddersfield. Med Hist 1987; 31: 415-439 (423).

39. For physical puritanism, see Clement M. Reference 35.

40. Holloway S.W.F. Reference 5, p. 61.

41. For magic, Davies O. Cunning-Folk in the Medical Market-Place During the Nineteenth Century. Med Hist 1999; 43: 55-73. Popular resistance to conventional medicine existed in the form of the practices and preparations of James Morison, Albert Coffin and others.

42. Without more detailed studies, it is difficult to be certain of the extent of the incorporation of homoeopathy (Reference 19) or herbalism in everyday over-the-counter practice. However, we must remember the continuing widespread use of herbal medicines within conventional practice that shaded into the botanical schools. Thus, while nineteenth-century herbalism was generally pursued by a separate strand of practitioners, it probably interwove with the activities of many chemists and druggists who sold botanical preparations.

43. For some aspects of this: Crellin J.K. Pharmaceutical History and its Sources in the Wellcome Collections: 1. The Growth of Professionalism in Nineteenth-Century British Pharmacy. Med Hist 1967; 11: 215-227.

44. Porter R. *Health for Sale: Quackery in England 1660-1850.* Manchester: Manchester University Press, 1989. p. 235.

45. The issue of pharmacist validation of 'unscientific' products is at least receiving more and more attention in North America. E.g. Rich P. Trusted health professionals have a duty to be informed. Pharm Post 1999; 7(4): 10. The author raises the issue of laissez-faire in a different context to Cowen (Reference1):

> The current *laissez-faire* attitude among alternative health practitioners and their patients that if something *seems* to work then it *does* work—even if there is no scientific or theoretical basis for it—is a dangerous one. It hearkens back to the days of quackery and the era before we had a good understanding of the human body and biological properties.

As health care professionals who want the right to counsel patients on their medical care, pharmacists have an obligation to be well-informed about the products they sell. If the science isn't there to show why a remedy works, then it shouldn't be on the shelf.

46. This is another question receiving attention. Pharmacists are still not recognized by the public as resources of information. For Canada: Drugstores #1 outlet for herbs. Pharm Post, 1998; 6(12): 14.

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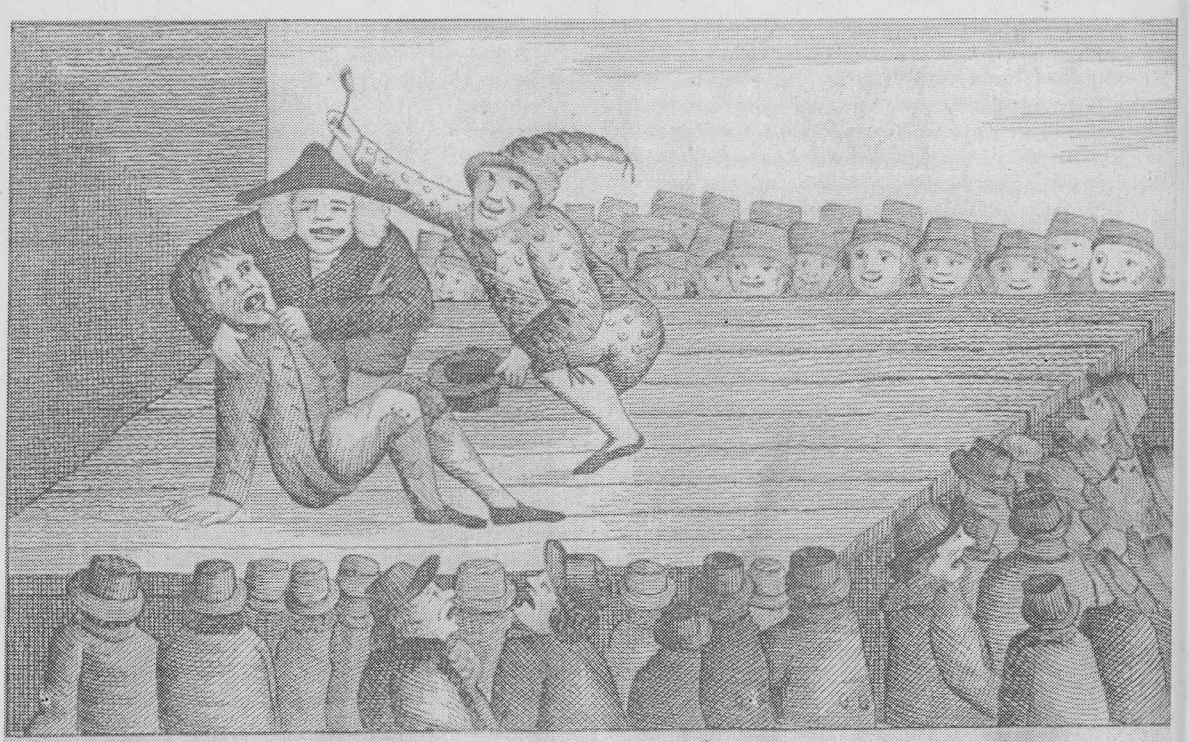


Hob and Stage Doctor

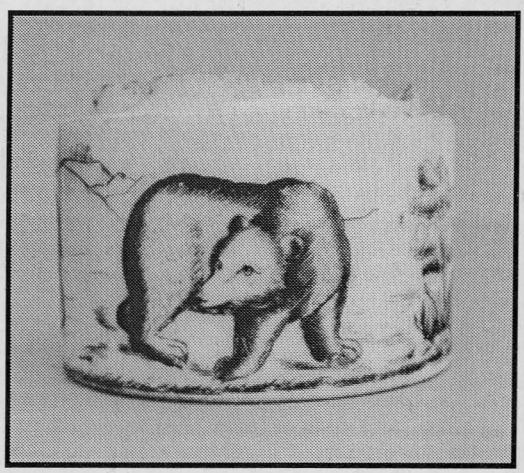
This print, like the two prints opposite from the collection of Professor Peter Isaac, was used as an illustration in his lecture on 'William Davison (1780-1858), Pharmacist and Printer of Alnwick' at theApril 2000 conference.

The following explanation of the story has now been provided by W.A. Jackson.

Lancashire Stories by Frank Hird (London & Edinburgh: T.C. Jack and E.C. Jack, n.d., pp. 46-7) contains the rhyming dialect story of 'Lancashire Hob and the Stage Doctor'. The gist of this is:

Hob had six teeth, all of which ached severely. The 'stage doctor' (presumably a travelling quack dentist) quoted a price of sixpence to extract a tooth, and refused when Hob asked if he would take out two for ninepence. Upon this Hob asked how many he would take out for twelve pence. "All that thou hast" the doctor replied. To his surprise, Hob climbed up on the stage and opened his mouth wide. Thinking to frighten him, the doctor sent for a large pair of pincers, but Hob told him to carry on.

Afterwards Hob turned to the crowd and said how foolish it would have been to pay sixpence for one extraction when he had had twelve for twelve pence, particularly as the teeth might grow again. The doctor stared in surprise and said that there was no chance that he would ever have a single tooth in his jaws again, and offered a wager of a crown that he had lost every stump. Hob then showed him the recently removed six teeth which he had placed in his hat and, offering to take him home where he had kept the stumps of all the teeth which had been drawn previously, to the doctor's dismay he picked up the five shillings and left the stage.



A rare Central European bears' grease container made from 'Milchglass' which probably dates from the eighteenth century and is decorated with a scene of bears in a wild landscape. Unfortunately the lid is missing and the lip of the jar is damaged.
From the W.A. Jackson collection.

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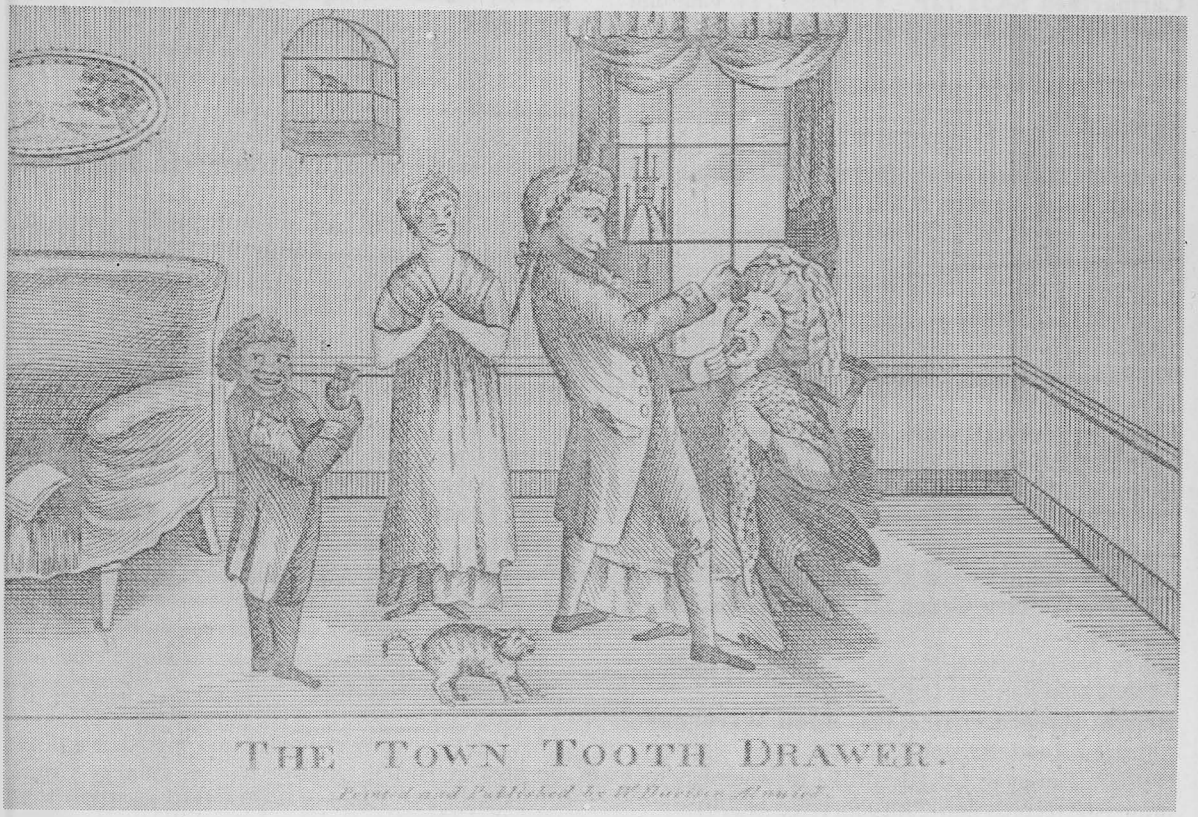
The Gout, printed and published by W. Davison, Alnwick. *From the collection of Prof. Peter Isaac*



The Town Tooth Drawer, printed by W. Davison, Alnwick. *From the collection of Prof. Peter Isaac*

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Records & Archives

The Royal Commission on Historic Manuscripts, in its annual *Accessions to Repositories* has reported the following accessions relating to pharmacy in **1998**:

National Museums and Galleries on Merseyside, Maritime Archives and Library, Albert Dock, Liverpool L3 4AQ - Ayrton, Saunders & Co, manufacturing chemists, Liverpool: records 1878-1968 (B/AS)

Barnsley Archive Service, Central Library, Shambles Street, Barnsley S70 2JF- GH Rock (Chemists) Ltd, Barnsley: prescription books and private formulation books 20th cent (A/1976)

Cambridgeshire County Record Office, Huntingdon, Grammar School Walk, Huntingdon PE18 6LF - HL Monks and SR Atzema, dispensing chemists, Kimbolton: records 1921-42

Devon Record Office, Castle Street, Exeter EX4 3PU - Chemist and druggist, Exeter, possibly Stone & Son: day book 1879-81 (5709)

Suffolk Record Office, Ipswich Branch, Gatacre Road, Ipswich IP1 2LQ - John Betts & Son, chemists and druggists, Woodbridge: prescription books 1885-1960 (HC460)

Tyne and Wear Archives Service, Blandford House, Blandford Square, Newcastle upon Tyne NE1 4JA - Atkins Ltd, chemists, Byker: records c 1880-1987

Carmarthenshire Record Office, County Hall, Carmarthen SA31 1JP - Chemists, 14 Vaughan Street, Llanelli: records c 1891-1973 (DB/111)

The following accessions relating to pharmacy were made in **1999**:

Wellcome Institute for the History of Medicine, 183 Euston Road, London NW1 2BE

Howard, Jewell & Co, chemists, Stratford: orders received 1809-43 (MSS 7654, 7736)

Thomas Brigstocke Humphreys, chemist, Portmadoc: recipe and account book, later 19th cent (MSS 7702-7703)

RM Park, pharmacist, Edinburgh: prescription register 1894 (MS 7772)

Netherton Hosking Symons, chemist, Penzance: recipe book c1870 (MS 7771)

Pharmacist[?], London: prescription register 1847-48 (MS 7692)

England

Berwick-upon-Tweed Record Office, Council Offices, Wallace Green, Berwick-upon-Tweed TD15 lED

Grays, chemist, Berwick: prescriptions and financial records l9th-20th cent (BRO 791)

Bristol Record Office, 'B' Bond Warehouse, Smeaton Road, Bristol BS1 6XN

William Butler & Co (Bristol) Ltd, chemists and druggists: records l9th-20th cent (Acc 41279)

Cumbria Record Office, Kendal, County Offices, Kendal LA9 4RQ

Isaac Braithwaite, chemist, Kendal: corresp, accounts and notes 1860-1937 (WD/HCW)

East Kent Archives Centre, Enterprise Business Park, Honeywood Road, Whitfield, Dover CT16 3EH

Stuart Dunn & Son Ltd, chemists, Deal: prescription book and account book 1885-89 (EK/U20)

Essex Record Office, Wharf Road, Chelmsford CM2 6YT

Pharmaceutical. shop, Barking: deed of partnership 1854 (D/DU 1921)

Gloucestershire Record Office, Clarence Row, Off Alvin Street, Gloucester GL1 3DW

Apothecary, Stow-on-the-Wold: ledgers 1809-32 (D8291)

Gloucestershire Pharmaceutical Committee: records incl. of predecessor committees 1923-95 (D8274)

Herefordshire Record Office, Old Barracks, Harold Street, Hereford HR1 2QX

Chave & Jackson, chemists, Hereford: prescription books 1861-1986 (BR13)

Surrey History Centre, 130 Goldsworth Road, Woking GU21 1ND

Leonard Sandall (1871-1959), dispenser, field naturalist and microscopist: notebooks, diaries and printed books (6661)

Tyne and Wear Archives Service, Blandford House, Blandford Square, Newcastle Upon Tyne NE1 4JA

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Edinburgh City Archives, Department of Corporate Services, City Chambers, High Street, Edinburgh EH1 1YJ

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Wales

Glamorgan Archive Service, Glamorgan Building, King Edward VII Avenue, Cathays Park, Cardiff CF1 3NE

Arthur Thomas of Cardiff: papers md herbal remedy recipe book c1900-35 (Acc 1999/65)

West Glamorgan Archive Service, County Hall, Oystermouth Road, Swansea SAl 3SN NM Grose, pharmacist, Swansea: records 1883-1910

More details of the annual accessions and an Index to the National Register of Archives can be found on the Historical Manuscripts Commission's web site: http://www.hmc.gov.uk

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Until 14 January 2001
'Spectacular Bodies: the art and science of the human body from Leonardo to now' An exhibition combining works of art with medical models and instruments from major collections and museums worldwide. Further details from the Hayward Gallery on the South Bank, Waterloo, London SE1. Tel. 020 7928 0921. Report by Lorraine Jones in Pharm J 2000; 265(Nov 11): 725.

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35th Congress for the History of Pharmacy at Lucerne, Switzerland. Further details from SGGP, c/o Schweizerischer Apothekerverein, Stationsstrasse 12, 3097 Bern-Liebefeld, Switzerland. Tel. +4131 978 5858.

Index 1996-2000

The five-year index for the Pharmaceutical Historian is published with this December issue. Please retain it for future use.

BSHP at the British Pharmaceutical Conference
Short reports of the papers delivered in the History of Pharmacy session at the Conference were given in the Pharmaceutical Journal 2000; 265(Nov 11): 728-9. Dr A. Llewellyn Lloyd spoke on the history of the Order of St John and Dr John Hunt on the day pharmacy in Britain entered a new era (1913). Dr Hunt's paper will be published in full in a future issue.

BSHP member Dr John Crellin, from the department of History of Medicine, Memorial University of Newfoundland, Canada, gave a paper on the need for a critical approach when considering the historical use of herbs in the plenary session on Complementary Medicines at the British Pharmaceutical Conference in Birmingham. For a short report see Pharm J 2000; 265(21 Oct): 625-6.

BSHP Mugs
A new bone china mug was added to the series of seven at the British Pharmaceutical Conference in September. The design by M. Bates shows *Rosa canina* and the mug is obtainable from Miss D.A. Hutton, Hawthorne House, Hatfield, Nr Doncaster, Yorkshire DN7 6SB at £5.50 plus £1.00 post and packing. Full details on the Society's website www.bshp.org Photo on the inside back cover of this issue.

Honorary Member of BSHP
Dr Nita Burnby has been awarded honorary membership of the Society in recognition of her contributions and work as editor of the *Pharmaceutical Historian* over many years.

British Society for the History of Medicine
The Committee of BSHP has agreed to affiliate to the BSHM, based at the Centre for the History of Medicine, The Medical School, University of Birmingham.

International Society for the History of Pharmacy
The Committee of BSHP has agreed to affiliate to the ISHP, also known as IGGP, and will hope to raise the profile of English-speaking countries in the Society. More details on www.histpharm.org

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Controlling the Cost of Medicines in the Twentieth Century in England

Shirley Ellis, PhD, MPharm, FRPharmS

The cost and value of medicines have always provided the government, the professions and consumers with a conflict of interest. Belief that the cost of medicines is too high, or that quality is related to price, is not a new phenomenon nor is it restricted to consumers.

Historical influences

As early as 1542 Henry VIII passed a law that broke the monopoly of the surgeons and physicians by allowing 'persons having a knowledge of herbs ... to practise, use and minister to external diseases according to their cunning'. The reason given for introducing the Act is 'because suffering was being caused to the poor by the surgeons will do no cure ... unless rewarded for the cure'.[1]

Neither were the apothecaries of the time without blame. In 1676 Gideon Harvey published *The Family Physician and House Apothecary*[2] containing 'medicines against all such diseases people usually seek advice from apothecaries to cure'. He claims that preparing them at home 'shall save nineteen shillings in twenty comparing with the extravagant rates of many apothecaries'. He excludes those medicines prescribed for serious diseases that should be 'kept secret between the physician and the apothecary'. This is perhaps the first clear distinction in approach between over the counter and prescription medicines. Accusations of excess profits persist throughout the centuries.[3] At the beginning of this century they were primarily directed at patent medicines as demonstrated by the publication of *Secret Remedies* by the British Medical Association in 1908.[4] This publication contained information on the ingredient cost versus price of many proprietary products. Both these books and Harvey's *Family Physician* may be considered as attempts to empower the consumer to influence costs.

As the nature of medicines and pharmaceutical practice changed after the second world war accusations were levelled at the pharmaceutical industry as a whole, rather than specific products. Governments now applied direct pressure through the Voluntary Pharmaceutical Price Regulation Scheme.[5]

The introduction of taxes on medicines

Attempting to put all the blame for the high cost of medicines on the producer has also persisted for over 300 years despite direct governmental influences. Medicines as a source of revenue for the exchequer were introduced during the reign of Charles I when a 'subsidy' was granted to the king for the defence of the realm at sea.[6] The *Book of Rates*[7] attached to a subsequent Act for Charles II in 1660 included a list of 250 drugs and medicines, commonly imported or exported, to which duty should be applied.

In 1783 George III went one step further and introduced 'Stamp Duty' on all medicines sold by unqualified merchants.[8] Two years later the duty was extended to cover all medicines wherever sold. It would seem that tax evasion was rife for in 1802 the Act was repealed and replaced by one that made 'effective provision for the better collection' of the duty.[9] The Act required that 'all persons involved in the vending of medicines take out a licence and pay duty on all the products for which the vendor claimed secret knowledge of the preparation or exclusive rights to the formula, which were patented or advertised, before they were sold'. Exemptions were granted for crude drugs and any products listed in the *Book of Rates,*[7] and for extemporaneous preparations by, or against the instructions of, a physician.

In 1904 changes to the Inland Revenue's interpretation of the Medicines Stamp Duty Acts[10] permitted exemption from stamp duty for medicines sold by duly qualified Chemists and Druggists provided that 'the label contains an adequate indication of the ingredients and the medicine is prepared in accordance with a formula in the *British Pharmacopoeia* or other well known book of reference'. To extend the range of items covered by this exemption the *Pharmaceutical Journal Formulary* was produced in 1904.[11] Increasing the number free of tax effectively reduced the cost of a wide range of medicines. Stamp duty doubled in 1915 to help pay for the first world war.

In 1940 stamp duty on medicines was replaced by Purchase Tax,[12] which was estimated to be contributing £18 million to the exchequer when the government doubled the rate in 1947.[13] In 1980 Purchase Tax was replaced by Value Added Tax.[14]

In the twentieth century the growth of the pharmaceutical industry and development of new dose forms has blurred the distinction between patent and prescribed medicines. This is clearly demonstrated by discussions on the doubling of purchase tax in 1947. Sir Stafford Cripps claimed that prescribed medicines did not attract purchase tax, as medicines made up by the chemist were not regarded as a manufactured article, but Sir Hugh Linstead pointed out that 50% of medicines prescribed at that time were proprietary medicines.[15]

Government intervention in health care

Only during the twentieth century did the conflict of interest between the cost and value of medicines become a political issue as the Government became responsible for both expenditure and revenue. The magnitude of the conflict was fuelled by the success of the pharmaceutical industry both in the development of new medicines and in generating national income through its exports.

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The insertion of a third party in the process of treating disease led to a subtle change in the cost versus value conflict. It was now the cost of prescribing against the money available that came to the fore rather than the cost of drugs *per se*. It also introduced a professional concern regarding the freedom to prescribe whatever the doctor considered to be necessary.

The National Insurance Act

The National Insurance Act of 1912[16] provided free medical benefits for those insured under the scheme. These benefits included an entitlement to obtain such drugs as may be ordered by the general practitioner free of charge. The local Health Committees were required to draw up lists of drugs that would be required and the price they were prepared to pay for them. This became known as the Drug Tariff. Pharmacists were then asked to enter into a contract to meet prescriptions at the agreed price. The price of the drugs was thus fixed and only the volume prescribed could vary. The amount of money put into the scheme for medicines was also fixed. Provision was written into the Regulations,[17] for the discounting of chemists' bills if it proved insufficient. Although prescribers were free to prescribe any drug they considered necessary subtle pressure was exerted from the outset to prescribe from within the list. Drugs outside the list had to be prescribed on special forms and the price to be paid negotiated. Any prescriber found to be prescribing extravagantly could have money deducted from his remuneration.

The Report of the English Commission for 1913[18] stated 'in certain areas the chemists bills for the year were in excess of the drug funds available. It was clear in many cases the excess was due, either in whole or part, to extravagant prescribing. Under the provisions for penalising this the amount of surcharges on the prescriber were paid into the Drug Fund and available to pay the chemists'. Some Health Committees in Wales still had insufficient funds and the Health Commission approved restrictions to the Drug Tariff:[19]

> 'Secret remedies' should not be paid for under the scheme as they cannot be considered 'proper and sufficient drugs and medicines'.

This is probably the first introduction of the requirement of efficacy.

> No proprietary articles of known composition that can be prescribed under their appropriate non-proprietary designation should be paid for.

Is this the first request for generic prescribing or a statement of the reimbursement level the pharmacist could expect?

> When some particular manufacturer's proprietary medicine ... is prescribed it may be supplied by the chemist but subject to the right of the Committee to declare the prescription extravagant and to deduct the extra from the practitioner.

Local Drug Lists continued until 1936 when it became the responsibility of the Minister for Health to make arrangements for the supply of drugs and appliances of proper quality.[20] The resulting *Drug Tariff* contained the prices for listed drugs, the method of calculating the payment for unlisted drugs, dispensing and other fees payable and the standards of quality for drugs ordinarily supplied. It retains this format to the present day.

The *National Formulary*

Although recommendations were made centrally the actual drug lists were still maintained and negotiated locally until 1935. In 1929 the British Medical Association issued a *National Formulary for National Insurance Purposes*[21] for use by medical practitioners and pharmacists. Their stated reasons for doing so included:

- the need for prescriptions previously written according to private agreement between neighbouring practitioners and pharmacists to be comprehensible to any pharmacist;
- to reduce the proliferation of formularies compiled by Health Committees and valid for local areas only; and
- to reduce the occurrence of the same 'title' covering different formulae in adjacent areas.

The compilers considered 'that the Formulary contained a sufficient number of varied prescriptions to cover the treatment of cases of disease in which marked individuality of treatment is not required'. It had been closely correlated with the contents of the existing *Drug Tariff* and the current edition was incorporated into the first national *Drug Tariff*[22] in 1939. Several statements relating to prescribing costs are found in the first edition. These include:

- That therapeutic efficiency be obtained with due regard to economy;
- that although no formulae should bear the same title as one in the *BP* or *BPC* unless identical with it, this convention had been broken in a few instances of formulae commonly used by practitioners where the official formulae would entail unnecessary expense to the drug fund;
- an appendix containing a list of proprietary articles in frequent use giving opposite to each item the non-proprietary substance of reputed analogous therapeutic effect.

The introductory section to this *National Formulary* ended with the following statement:

> While the Formulary is offered to the medical and pharmaceutical professions in the hope that it will be a great prescribing convenience and an aid to efficient and economical prescribing, it is to be clearly understood that it affects in no way the right of a medical practitioner to order such proper and sufficient medicines for his patients as the terms of his contract with the Insurance Committee require.

This is followed by two statements in the Notes for Medical Practitioners which create some doubt as to the independence of this document:

> •Whilst it is the duty of the *insurance practitioner* ... to see that all appropriate and necessary drugs are available

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for the needs of his patients it is incumbent upon him to see that improper and unnecessary charges are not incurred. (Whether this refers to the drug fund or fines on the practitioner is unclear.)

- The practitioner's discretion in the matter of treatment must be absolute but this can be maintained whilst at the same time regard is paid to economy in the matter of prescribing.

This must be the most frequently repeated statement of the century in communications with medical practitioners and it is interesting to see it emanating first from a professional body.

The *National War Formulary*

At the outbreak of the Second World War a Therapeutic Requirements Committee was set up by the Medical Research Council. and in 1941 they published a memorandum on Economy in the Use of Drugs in War Time[23]. The object of the publication was to give an indication of the relative therapeutic importance of drugs in ordinary use. The recommendations it contained were given effect in the *National War Formulary*.[24] All drugs in common use were classified as:

- A. Drugs which are important therapeutic agents, and which should be made available as far as practicable;
- B. Drugs which are needed for certain purposes, but of which supplies are limited;
- C. Drugs which are not essential and do not justify importation or manufacture for home use in war time.

Doctors were asked to prescribe drugs in Class B only for the purposes for which they were known to be of substantial value and not to prescribe drugs in Class C. Many of the vegetable drugs and extracts included in Class C never returned into common use. This initial attempt at classification on therapeutic efficacy based on necessity was repeated with varying degrees of success as a means of reducing expenditure during the second half of the century.

The National Health Service (NHS)

The introduction of a National Health Service in 1946[25] was in many respects an extension of the National Insurance scheme to the whole population. Drugs were still to be supplied free of charge. The problems of underfunding were thus perpetuated.

By 1949 it was found necessary to introduce a charge on prescriptions[26] but it was stressed that this was a contribution to the service and not a charge for the drugs supplied. It may have been hoped that its introduction would reduce the number of prescriptions requested. Any income was not set against the drug bill.

Definitions of drugs

In 1950 a Standing Medical and Pharmaceutical Advisory Committee was set up to advise on prescribing issues. Its initial recommendations related to substances which were to be regarded as foods or toiletries and were not prescribable under the NHS.[27] Some products were allowed in certain circumstances, to be justified by the prescriber, and were classified as 'Borderline Substances'.

In 1954 the committee became the Standing Joint Committee on the Classification of Proprietary Preparations. Its task was to identify preparations the prescribing of which appears to call for special justification. The basis used was therapeutic value and a list of the preparations was published. In the first *Proplist*[28] six classifications were used: A, Al, A2 and A3 were acceptable preparations with active constituents; B1 were preparations having a lesser degree of efficacy or greater degree of toxicity than alternatives available; and B2 were not of proven efficacy. The objective of the publication was to help doctors to decide what should be used in the treatment of their patients. As to the prescribing of proprietary preparations they advised that preparations classified in Category A should be prescribable in the NHS provided that they were properly described as drugs ... and not advertised to the public. They went on to say that 'although there should be no restriction upon a doctor prescribing any drug, which in his view is necessary, for the treatment of his patients, the use of preparations from Category B and preparations advertised to the public may require to be specially justified'.

The classification system was improved in 1957[29] to accommodate new drugs for which prima facie evidence of therapeutic value had been presented. Categories O and H replaced categories B1 and B2 and a separate list of medicines advertised to the public was added. The original view that 'there should be no absolute restriction on prescribing' was reiterated. The Chief Medical Officer wrote to doctors in 1960[30] suggesting that 'doctors would no doubt wish to refrain from prescribing any preparation in categories O and H' but it was not until the 1980s that prescribing of many of these preparations on the NHS was banned.

Voluntary Pharmaceutical Price Regulation Scheme

In 1957 the Minister for Health and the Association of the British Pharmaceutical Industry entered into a voluntary agreement on the prices to be charged for drugs to the National Health Service[5]. It was designed to maximise the industry's contribution to the development of drug therapy and to export sales but to discourage extravagant overheads and sales promotion. By 1959 prices had been agreed for 3200 preparations, equivalent to 88 per cent by value of all preparations falling within the scope of the scheme.[31] Despite this, in 1965 the government appointed Lord Sainsbury to examine the relationship of the pharmaceutical industry in Great Britain with the NHS. The report[32] recommended the setting up of a Medicines Commission to control the introduction, promotion and marketing of pharmaceutical products through a system of licensing. In addition standard cost returns on each product should be supplied by each firm and an audited, annual, financial return

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showing the results of its pharmaceutical business. Their more radical proposal that there should be no brand names for new pharmaceutical products was not adopted. The Medicines Commission was established through the Health Services and Public Health Act of 1968.[33] The Pharmaceutical Price Regulation Scheme has continued, with modifications, to the present day reducing costs to the NHS through restriction of manufacturer's profit margins.

The Hinchcliffe Report[31]

Just 10 years after the NHS was established the government set up a committee, under the chairmanship of Sir Henry Hinchcliffe, to look into the costs of prescribing which were thought to be excessive. Amongst the conclusions in the report are the following two statements:

> the main factors influencing the cost of prescriptions are the coincidental introduction of a free and comprehensive Health Service for all and the discovery and large scale production of valuable but expensive drugs.
>
> The community as a whole derives tremendous benefits from the pharmaceutical service, financially as well as in the relief of suffering and the saving of life. The use of new drugs has made a valuable contribution to the treatment of tuberculosis and other infectious diseases and in medical practice and has relieved the pressure on hospital accommodation. The Minister should consider ways and means of publicising these facts in a telling manner.

Despite these statements, which imply that the expenditure level was justified the report made many recommendations, including suggestions for the inclusion of prescribing and its costs in undergraduate medical training and special post graduate courses. The public too were to be educated by posters in surgeries 'warning against the medicine habit'.

The use of official titles in place of brand names on prescriptions was again proposed and the Minister was advised to 'inform prescribers as soon as economies are likely to result from the use of such titles'. It was also suggested that the Minister should seek a voluntary limitation of the amount of drugs per prescription to 1 week except in chronic or special conditions.

Prices should be included in the *British National Formulary* (*BNF*) so that doctors could select the least expensive treatment from appropriate therapeutic groups. At this time the *BNF*[34] contained formulae together with recommended quantities to be dispensed and it was not until a new format was introduced in 1981 that pricing was introduced.[35] Both generic and brand names were listed and categorised by one of five pricing bands for comparison. It was not until 1987[36] that actual prices were included.

The *Handbook on Prescribing*

Following the recommendations of the Douglas and Hinchcliffe Committees[30] a *Comprehensive Handbook on Prescribing* was circulated to all general practitioners and hospital doctors in 1960.[37] In several sections of the 'General Information on Prescribing' overt pressure was now applied in an attempt to control costs. For instance to the terms of service statement 'duty to prescribe whatever drugs are requisite ...' was now added 'He is expected to exercise reasonable care in avoiding waste of public funds'. A free copy of the *British National Formulary*[34] was included with the Handbook and it was pointed out that it contained lists of standard* preparations which were equivalent or reputed to have an analogous therapeutic effect. To drive the point home the Handbook contained a section giving the comparative prices of standard and proprietary preparations. It was also recommended that medicinal preparations advertised direct to the public should not be prescribed and included a list of all such preparations.

Comparative cost circulars

In 1966 branded products still represented the majority of prescriptions and the Minister for Health began the distribution of a series of cost circulars to doctors and pharmacists. The first dealt with oral diuretics and listed 22 branded products with their strength, dose and cost of 28 days' treatment[38]. Once the series was complete the project lapsed but was revived in 1984. This time 12 charts were sent out together, covering antibacterial drugs and antidepressants and including both branded and generic products. It was claimed that by promoting the use of the generic forms these charts could lead to savings of £9m.[39]

Greenfield Report on Effective Prescribing[40]

Dr Peter Greenfield, from the DHSS, chaired an informal working group of members of the medical profession which came up with several radical proposals and introduced the concept of cost effective prescribing for the first time. The first recommendation, which has never been implemented, was the introduction of generic substitution by the pharmacist unless specifically instructed otherwise on the prescription. This proposal was put forward in preference to the introduction of a national limited list of drugs. The list was ruled out through lack of evidence that financial savings would outweigh the administrative costs and the resistance to curtailment of clinical freedom.

Other recommendations which were introduced with the reorganisation of the NHS in 1990 were the provision of comparative prescribing data on a national scale and the involvement of general practitioners in Drugs and Therapeutics Committees. Both of these were to be reinforced by giving prescribing a higher priority in the vocational training of general practitioners. Just as Hinchcliffe had done over 20 years earlier the working party realised that education was the only reliable route to effective prescribing.

*'Standard' at this time implied a preparation in the *British Pharmacopoeia*, the *British Pharmaceutical Codex* or the *British National Formulary*.

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Limited list

Despite the comments of the Greenfield report in November 1984 the government issued a consultative document on prescribing limits for benzodiazepines and drugs for minor ailments.[41] The result was a list of drugs[42] which could not be prescribed within the NHS from April 1985. For the most part it reflected preparations advertised to the public which had been identified as far back as 1954 as being inappropriate for prescribing within the NHS.[28] It was successful in reducing drug expenditure; in the first year savings of £75m were reported by the Minister for Health[43] in 1989. He added that it was not possible to estimate savings for subsequent years.

Reorganisation of the National Health Service

With the reorganisation of the health service proposed in the National Health Service and Community Care Act 1990,[44] responsibility for controlling prescribing expenditure was delegated from the centre to individual prescribers.

Indicative amounts[45] were issued to each medical practice representing the basic price of the drugs, medicines and listed appliances which a Family Health Services Authority (FHSA) 'considers it is reasonable to expect will be supplied in a year to patients registered with that practice'. It was then up to each prescriber to stay within the amount allocated by practising cost effective prescribing. Assistance was given through the provision of comparative prescribing data, PACT[46] and the support of Pharmaceutical Advisers[47] and subsequently financial incentives.[48]

Savings were achieved through the development of practice formularies[49] and through an increase in the number of prescriptions written generically.[50] The greatest savings were achieved by fundholding practices which were given real rather than indicative amounts and any savings could be spent on other forms of health care.[51] Generic prescribing will continue to reduce the NHS expenditure on drugs but the significant savings produced by the initial change will not be repeated. As future patents expire and generic forms become available cost reductions will be offset by the introduction of more effective branded drugs to replace the older generics. These may well prove to be cost effective in the broadest sense, though of higher price.

Overspending was followed by critical review by the FHSA but the national drug budget remained open-ended. Only at national level did excessive prescribing affect the provision of funds for other health care. This loophole was closed by the NHS Act 1999[52] when Primary Health Care Groups(PCGs) were set up with finite budgets to cover all aspects of health care. Already some PCGs are experiencing difficulties[53] and the public are being asked to help by not requesting medicines they do not need.

Medical advances

Advances in medical research have resulted in both genetically engineered drugs and treatment for previously untreatable diseases, but at high cost. The introduction of beta-interferon in the treatment of multiple sclerosis brought the problem to a head. For the first time a central policy for its use was the subject of national debate. Guidance was issued by the Department of Health[54] to control expenditure on the drug whilst ensuring that those who would benefit most received it. Differing levels of compliance with the guidance between Trusts has led to so-called 'postcode prescribing' and inequity for patients. More recently, intervention by the Minister for Health has been in the form of a ban on NHS prescribing of newly licensed drugs. In the case of Viagra (sildenafil)[55] this was later revised to limitation for certain conditions. Relenza (zanamivir)[56] was banned on the advice of the National Institute for Clinical Excellence on the grounds of insufficient evidence of effectiveness in vulnerable groups.

National Institute for Clinical Excellence (NICE)[57]

NICE has been set up to review new and existing treatments and procedures against standards of efficacy and cost effectiveness. They advise the government on whether new drugs should be accepted for prescribing within the NHS and issue clinical guidelines on the use of those which are. The Director, Prof. Sir Michael Rawlins, has made the following statement several times:[58]

> It is important to realise that when it comes to clinical guidelines it is impossible to construct a guideline that meets the needs of every individual patient. There is no intention of the NICE expecting doctors to use guidelines irrespective of patient circumstances. ... The institute is not in the business of rationing, it is not in the business of denying people things that they need.

He has also denied that advice from the Institute that a treatment was not cost effective would effectively prevent it from being available on the NHS. Guidance from the Department of Health has always been regarded as that, not an instruction, by health professionals, but it will be hard for PCGs facing an overspend situation to justify it if guidance has been ignored. Some general practitioners are already voicing concerns along the lines of 'The GP's duty is to their patients, not politicians. I feel very strongly that rationing is not part of the GP's remit'.[53]

What is already clear is that NICE has the potential to improve the standard and equity of care through evidence-based advice[55] but whether it can improve control of prescribing expenditure will take several years to determine.

Conclusion

It is unlikely that the twenty-first century will bring a final solution to the conflict between value and cost in the contribution that pharmaceuticals can make to

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improving the health of the nation. Increases in scientific knowledge may shift the emphasis from cure to prevention but the cost will be high. Changes in attitude between the professionals and their patients and in public perception of the welfare state may make rationing more acceptable or reduce the financial constraints. However, given the importance every individual attaches to his own health it is unlikely that resources could ever match the perceived need outside Utopia.

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The treatment of poisoning from classical times to the late eighteenth century

W. A. Jackson

Introduction

From ancient times, it has been understood that the adverse effects of ingesting a toxic substance, whether by accident or design, could be avoided or diminished by the administration of an antidote, or by emptying the stomach before too much of the poison had been absorbed, using emetics or instruments which would induce vomiting. In the event of being bitten by a venomous creature sucking out the poison might help. In addition, many people believed in magical cures and/or the power of prayer.

Poisons of the Past

It is impossible to identify with any certainty all the poisons which were used in classical times. Vegetable poisons such as Mandragora, Henbane, Aconite, Hellebore, Opium and Cannabis were used, though not always with the intention of killing. Animals which were believed to be venomous included toads, salamanders and molluscs such as sea hares; and poisons such as cantharides and bulls' blood (possibly putrefied) were also in use, as well as the mineral poisons, orpiment, cinnabar and litharge.[1]

Many of these vegetable and mineral poisons continued to be used into the nineteenth century, although those derived from minerals were often more refined than the crude ores which had previously been employed, for example arsenious oxide and mercuric chloride. Particularly popular for homicide was arsenic, a white tasteless powder which was often used for killing vermin and was easily obtainable. The symptoms produced resembled those of food poisoning or cholera. Opium preparations were frequently used to relieve pain, and accidental overdosage was not infrequent at a time when the strength of medicines prepared from plants was subject to considerable variation.

There can be little doubt that a considerable number of people of high rank died as a result of the deliberate administration of poison in mediaeval Europe, and fear of this fate was widespread. It was responsible for the employment of food tasters, and for a steady demand for antidotes. In 1530 in England an Act was passed which introduced the sentence of being boiled alive for anyone convicted of poisoning, and this was the fate of Margaret Davie at Smithfield in 1542 for murdering people at three houses where she had lived.[2]

Antidotes

The Classical World

In the classical world it was far commoner for people working in the fields to be bitten by snakes, scorpions and spiders than it is nowadays. Also, accidental poisoning due to unwittingly eating poisonous plants was more likely to occur.

In most cases it was unlikely that any doctors would have been available, so simple home remedies prevailed: for bites, suck out the poison and apply one or more herbs to the wound. For poisons administer oil, sometimes with the addition of herbal juices to make the patient vomit.[3]

In the second century AD, Galen of Pergamon's ideas were based on the humoral theory of Hippocrates and the Pythagorean doctrine of the four elements combined with his own ideas about the four temperaments.[4] Some of the remedies he suggested were:

for venomous bites:

juice from the leaves of the mountain ash in wine;
apply the blood of a duck or the flesh of a freshly killed fowl to the wound;
for the bite of a viper wild thyme with vinegar; or cut off the viper's head, apply the bloody part to the bite, bind tightly and leave to heal;

for poisons:

oil and water to produce vomiting;
nine juniper berries and twenty five leaves of rue, rubbed down;
pungent enemas made from honey and coarse soda;
for poisoning by fungi, the dung of a domestic fowl with oxymel (a mixture of vinegar and honey).[5]

For those who had access to the services of a doctor and could afford to pay for expensive medicines, more complex remedies were available. One formula which contained turpentine resin, scales of copper, copper rust scrapings, birthwort,* frankincense, sal ammoniac, gutta ammoniaca,* alumen, myrrh, chalbanum,* old oil and pungent vinegar was used to draw out venom.[6]

Galen's ideas remained dominant until the Renaissance, and still influenced English medicine in the eighteenth century. In fact, some of the remedies he suggested were still to be found in the self-help books of the late nineteenth century. He gave formulae for many compound antidotes, the most important of which were the alexipharmics known as 'theriacs' or medicinal treacles.

Theriaca was originally a term used for a type of antidote for venomous bites, but which came to be applied to this kind of preparation used for other poisons and as a remedy for infections such as the plague.[7]

The most important of them became known as 'The Four Officinal Capitals' — Mithridatium, Theriaca Andromachi (Venice Treacle), Philonium and Diascordium. These acquired a great reputation as panaceas or universal remedies, and were in use for more than two thousand years. All were polypharmaceutical electuaries which contained opium, herbs and honey. The most famous were Mithridatium and Venice Treacle. The latter was devised by Nero's more

* See Appendix, p.66 for identification

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than two thousand years. All were polypharmaceutical electuaries which contained opium, herbs and honey. The most famous were Mithridatium and Venice Treacle. The latter was devised by Nero's physician Andromachus as an improvement on Mithridatium, the most significant change being the addition of viper's flesh.[8] This was considered to be a particularly effective remedy because their bite was so toxic that their bodies must contain an antidote to protect them against their own poison. The best vipers were said to come from Venice where they were specially bred in viper gardens.[9]

If we look at the formula for Venice Treacle from the *London Pharmacopoeia* of 1746 we can see why this and similar preparations were so expensive. It contained; troches of squills, long pepper, strained opium, dried vipers, cinnamon, balm of Gilead, agaric, orris root, scordium,* red roses, navew seeds,* extract of liquorice, spikenard, saffron, amomum,* myrrh, costus,* camel's hay,* cinqefoil root, rhubarb, ginger, Indian leaf,* Cretan dittany leaves, horehound, calamint, French Lavender, black pepper, parsley seeds, olibanum, Chio turpentine, valerian root, gentian root, Celtic nard,* spignel,* poley mountain,* Saint John's wort, ground pine, creeping germander, fruit of the balsam tree, aniseed, fennel seed, lesser cardamoms, bishop's weed,* hartwort,* treacle mustard,* juice of rape of cistus,* acacia, gum Arabic, storax, sagapenum,* Lemnian earth, calcined green vitriol, creeping birthwort,* lesser centaury, Cretan carrot seeds, opoponax,* strained galbanum, Russian castor,* Jew's pitch,* sweet flag root and clarified honey. The honey made up 75% of the total weight.[10]

Theriac was regarded as being so important in Europe that in some countries it had to be made under the supervision of doctors, and in the seventeenth and eighteenth centuries this was done ceremonially in public.[11] However, this was not the case in Britain.

Roman Occupation

During the four centuries in which Britain was occupied by the Romans, their medical knowledge was probably derived largely from the *De Compositione Medicamentorum* of Scribonius Largus, a medical military officer who came to Britain in AD 43. This would have been available to their garrisons and to a few patrician families, but the majority of people would have relied on magical, herbal or animal remedies based on folk lore, or on prayer.[12]

The Dark Ages

Throughout the years which followed, some knowledge of classical medicine would be retained in Latin manuscripts held in the libraries of the large abbeys, and, from the late ninth century in some leech books which were written in Anglo-saxon. These also contain some indigenous remedies from this period,[13] but there is no written record of the bulk of folk medicine, though this must have been employed in by far the great majority of cases of poisoning.

In the twelfth century Avenzoar of Seville, an Arabian surgeon introduced the idea that bezoars were of value as antidotes against poison. He believed that these were the coagulated exudate from the eyes of stags which had eaten snakes in order to increase their strength.[14] In fact they were calculi from the intestines of animals. They became so highly regarded that, in the seventeenth century, the word 'bezoardical' came to be used as meaning anything which was effective against poisons. Belief in their value lasted for a long time, and they were included in several editions of the *London Pharmacopoeia* from 1618 onwards.[15] Any drink in which a bezoar had been suspended was believed to have been detoxified. They varied considerably in size, some being large enough to be made into goblets which were highly valued, because any liquid put into them was thought to have been freed from poison.[16]

The Physicians of Myddfai practised in Carmarthenshire until the late eighteenth century, and from the thirteenth or fourteenth century compiled manuscript records of many remedies drawn from classical sources as well as their own personal observations and trials.[17] They suggested the use of rue for poisoned food or drink:

> Take rue, bruise well and pour white wine thereon (as much as will cover it), and if there is no wine, then ale, or mead; let the liquor and the herb be stirred well and strained. Let a draught of this be given to the patient in the morning fasting, and another in an hour, and he will be cured.[18]

Herbals

The advent of printing about the middle of the fifteenth century made possible the production of a great number of herbals with woodcuts illustrating the plants they described. Banckes (1525) and Askham (1550) were the first English ones, but John Gerard's *Herball* or *Generall Historie of Plantes*, published in 1597 became the most popular of all English herbals. When writing of the 'vertues' of herbs Gerard drew largely on classical authors. For instance, of Garden Rue or Herb Grace he notes that Pliny said its leaves 'beaten and drunk with wine' were an antidote against poisons, and Dioscorides recommended drinking the seed in wine as a remedy for poisoning by 'Wolfesbane', Mushrooms or 'Toad-stooles', snakebite and the stings of scorpions, bees or wasps.[19]

Nicholas Culpeper (1616-1654) practised as an astrologer and self-styled physician. He was outspoken in his criticism of orthodox physicians, and in 1649 he published an unauthorised translation of the *London Pharmacopoeia*. In 1653 he published *The English Physician ...* .[20] This book emphasised the importance of astrological influences on plants, at a time when botany was tending to become more

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scientific, but it enjoyed immense popularity, and many editions were published up to the nineteenth century.

He frequently described herbs as resisting poison and venomous bites, but offers very few remedies for specific poisons. However he does say that the leaves or berries of Herb True-love* are 'effectual to expel Poison of all sorts, especially that of the Aconites'.[21] Wind-Marjarom* (sic) 'helps the bitings of Venomous Beasts, and helps such as have poison'd themselves by eating *Hemlock, Henbane,* or *Opium*'.[22] The seed of Southern-Wood taken in wine was an 'Antidote or Counter-poyson against all deadly Poyson'; and the smell of the burning herb would drive away serpents and other venomous creatures.[23] It comes as no surprise to find that Viper's Bugloss was an 'especial Remedy against the biting of the Viper, and all other venomous Beasts and Serpents; as also against Poison or poisonful Herbs.'[24]

Pharmacopoeias and Dispensatories

In *The Surgions Mate,* (1617) which was written by John Woodall, Surgeon-General to the East India Company, he mentions Theriaca Londini, a variation on the classical theriacs, saying that he would prefer to use this, freshly prepared, to any bought from 'beyond the seas', having met a Hollander who 'lived by making Mithridate and Treakell (sic). This gentleman confessed that he only used nine simples in making Mithridate, and sold his products in pewter boxes which could not be distinguished from 'right Venice ones'. For the surgeons' chests on the company's ships he had appointed :

> 'some of the Species of the *London* Treakell (sic) ready poudered, and dry, that the diligent Surgeon at his will may compose a *London* Treakell at sea, namely, by taking hony three ounces and of this pouder one ounce, and heate them together, stirring them well till all be incorporated,' — a sort of 'Pulv. Pro Theriace Londini.'[25]

The first *London Pharmacopoeia* was published by the London College of Physicians in 1618, and was intended to become the standard work on medicines for the whole of England. Other editions followed until the final one (the tenth) in 1851. They were printed in Latin, but vernacular translations as well as dispensatories and formularies derived from them were published, making their contents available to a wide range of people.

The identification of antidotes for poisons is not as easy as one might think in these publications. In his *New Medical Dictionary* of 1775 Motherby notes under the heading 'Venenum' (i.e. poison):

> Poisons are mineral, vegetable, or animal. The mineral are acrid and corrosive, as arsenic &c. the vegetable are generally narcotic, as opium &c. the animal hurt not but by being inserted by a wound, as the bite of a mad dog &c.
> (For) The usual symptoms consequent on receiving different poisonous substances into the body, with the methods of relief, see in the respective articles of this kind.[26]

In other words, the treatment was based on the humoral system of medicine and depended entirely on the type of symptoms which presented.[27] The term 'alexipharmic' is now defined as an antidote or a remedy for poison, but in the eighteenth century Motherby observed about them:

> These sort of medicines, though counter-poisons, yet chiefly relate to the cure of malignant fevers.[28]

One of the earliest of the books designed to be sold to the general public was *The Skilful Physician,* by Nathaniel Ekins which was published in 1656. This contains 'Directions for the Preservation of a Healthful Condition' and 'Approved Remedies for all Diseases and Infirmities (outward or inward) incident to the Body of Man'.

In the middle of the seventeenth century the toad was still considered to be a venomous animal, and he recommended the following topical application:

> For the Poison of a Toad, or other Poison. Take a handful of Plantane, and a handful of Parsley, and stamp and strain them into a little raw Cream, and mingle it well together, and annoint the place grieved therewith.'[29]

In another remedy, 'unicorn's horn', an expensive medicament of animal origin, was one ingredient in a medicine to treat the bite of a mad dog.

> Take a handful of Box, and stamp it, and strain it with a draught of milk, put into it a pretty quantity of Lobsters shell beaten to powder, and some Unicorns horn, if you can get it, and drink thereof and wash the wound therewith.[30]

As well as being used in compounded medicines, a cup made from this horn would provide protection against poison if wine or water were drunk from it just after taking the poison.[31] At this time people still believed in the existence of a number of mythical beasts. Unicorn's horn was actually the tusk of the narwhal, but even a hundred years later not everybody was convinced that this was true. In the twelfth edition of the *Compleat English Dispensatory* (1749) we find that the unicorn was thought to be

> nothing but the rhinoceros; tho' some strenuously contend that this horn is the tooth of a fish.[32]

By this time it had already been eliminated from the fifth *London Pharmacopoeia* (1746).

Ekins does not give a formula for Mithridate but he did use it as an ingredient in several remedies.

William Salmon (1642-1713) wrote the very successful *New London Dispensatory,* (1678) which ran to several editions. For the bite of a viper he recommended that:

> At first the poison may be sucked out, by applying the anus of a hen to the part after scarrification, or else a plaster of garlick onions and Venice Treacle, drinking French wine, garlick broth, and taking mithridate, bezoar mineral* and myrrh etc.[33]

A popular eighteenth century Dispensatory was John Quincy's *Pharmacopoeia Officinalis & Extemporanea: Or A Compleat English Dispensatory,* first published in 1718, and rapidly followed by

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a second edition in 1719.[34] By the beginning of the eighteenth century the value of many of the old medicines was being questioned. In the 1719 edition he wrote of Unicorn's Horn and Stone of a Stag's Heart (usually referred to as 'Bone of a Stag's Heart'):

> they seem to have got into Medicine only thro a false Philosophy, and are of so little efficacy, that they are now justly neglected, and of no regard.[35]

He also questioned the usefulness of drugs such as Oil of Puppies, Oil of Exeter (which he describes as 'a most wretched medley'), Oil of Swallows, Oil of Bricks, Oil of Scorpions and Oil of Vipers.[36]

He thought that Mithridatium and Venice Treacle both had many ineffective ingredients and suggested alternative formulae for them. Of Theriaca Londinensis he remarked 'it is not worth our particular Animadversion.'[37] Referring to bezoars he says:

> They have neither smell nor taste, and, upon taking into the stomach, give no sensation, nor produce the least perceivable effect; which is ground enough to suspect them good for nothing.'[38]

William Lewis wrote *The New Dispensatory: Intended as a Correction and Improvement of Quincy.* In the first edition of 1753 Lewis observed:

> Later writers also bestow extraordinary commendations on it (bezoar) as a sudorific and alexipharmac; virtues to which it certainly has no pretence. ... It cannot be considered in any other light than as an absorbent; and is much the weakest of all the substances of that class.'[39]

He doubted the value of many of the drugs which had been in use since classical times. Many members of the College of Physicians still clung to these old remedies, and resented criticism of them, but it was becoming increasingly obvious that a great number of them were of little or no value.

As we have seen, by the middle of the eighteenth century even the efficacy of the medicinal treacles was being questioned. In *Antitheriaka, Essay on Mithridatium and Theriaca*, (1745), William Heberden, an eminent physician, produced a reasoned argument against their having any value as antidotes for poisons or venoms, and from this time their use declined in Britain, although they survived longer than he had expected.[40] In fact, one finds formulae for all four of them printed in the 1836 edition of Gray's *Supplement to the Pharmacopeia,*[41] an indication of the strength of tradition. There is, however, little evidence of their use by this date. Pharmaceutical historian, Leslie Matthews, said, 'It was in 1788 that the Grand Compositions began to disappear, due, it would seem, to Heberden's caustic essay on Mithridatium and Theriaca.'[42]

They were excluded from the Edinburgh Pharmacopoeia of 1756 as well as certain remedies that had been retained through 'superstition', 'credulity' or 'established custom'. In addition the number of animal simples was reduced from forty-seven to twenty-seven, and then to ten in the 1774 edition.[43]

As the view that illness should be regarded as a divine punishment, and consequently the belief in religious and magical cures faded, it was being replaced by a new scientific approach to healing. The belief in alexipharmics was also declining, but medical interest in the treatment of poisoning was intensifying, and by the end of the century new antidotes which were effective were actively being sought.

Instruments used to induce vomiting

As previously mentioned, an alternative treatment to the use of antidotes was to remove the contents of the stomach before too much poison had been absorbed. Before 1790 this could only be achieved by making the patient vomit, either mechanically by irritation of the mucous membrane of the stomach, irritating the fauces, interfering with the balancing organs in the ear (as in motion sickness), by unpleasant smells and tastes or by administering a substance known as an emetic.

It is known that, in classical times, the Romans deliberately induced vomiting after their banquets to relieve the discomfort resulting from their distended stomachs, and to make room for the next meal. Emetics were known at this time, but they were not popular for this purpose. Their effects could not always be predicted, small doses often producing nausea without emesis, while larger doses might cause retching to continue for some time after the stomach had been emptied.

Because of this, devices were designed specially to induce vomiting, and these were also used from classical times until the eighteenth century to treat poisoning.

Let us consider those instruments which, at various times, have been used for this purpose.

A popular remedy in the first century AD was to tickle the back of the throat with a 'vomiting feather', or 'pinna', which was often made more effective by being dipped into a nauseous liquid.[44] A more elaborate instrument was the 'Digital Vomitorum' described by Oribasus in the fourth century AD. This was a glove finger 'made from Carthaginian leather or something else very soft', the bottom two thirds of which were filled with wool, the top third containing the finger of the operative who directed the instrument, which was lubricated with ointment, down the patient's oesophagus.[45] He also suggested the use of eight to ten goose feathers, which had been dipped in Iris oil or Cyprus oil, to irritate the fauces, and advocated the use of a suspended bed in which the individual was swung until motion sickness produced the desired result. The 'Lorum Vomitorum', which dates from the first century AD, was a leather strap impregnated with a foul-tasting compound containing tannic acid. It was particularly recommended by Scribonius Largus for cases of opium poisoning.[46] One end of the strap was swallowed, the other being held outside the mouth.[47] After the fall of the Roman Empire, the social use of such instruments decreased

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greatly, but they were still used in cases of poisoning.[48]

Another even more heroic instrument, the 'stomach brush' or 'stomach cleanser', was described by the English physician Rumsey in *Organum Salutis, or an Instrument to Cleanse the Stomach* (1649). It was a flexible, smooth, curved piece of whalebone, two to three feet long. At its tip was an ivory button, to which was attached a tuft of silk cord, horse hair or linen. This was pushed down into the stomach, and apparently was very successful as a cleansing instrument.[49] A similar brush, recommended by J.C. Socrates in the early eighteenth century, was made from steel wires, which were bound and padded before being encircled with silk thread. It was approximately twenty six inches long, the final three inches being a brush, two inches in diameter, which was held in position by goat or horse hair. Before use, the instrument was soaked in water and curved slightly, and the patient given diluted brandy.

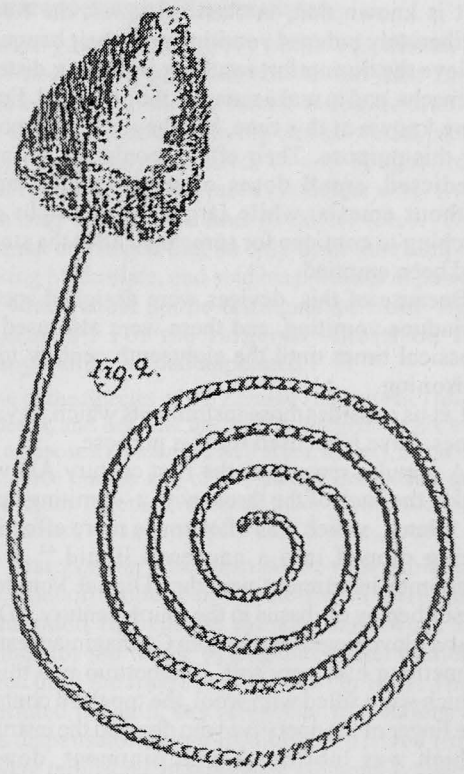

Figure 1. Balai de l'estomac; see ref. 51.

However, such instruments did not always produce good results, and were responsible for a number of fatalities.[50] Unlike the instruments mentioned previously, stomach brushes worked by physical irritation of the gastric mucosa, so it is not surprising that their use sometimes resulted in the death of a patient, particularly one with a gastric ulcer or stomach cancer. Gradually their use was discontinued, but the inclusion of one in the plates which were published in 1780 to illustrate Diderot's Encyclopedia[51] suggests that they were still in use towards the end of the eighteenth century (*see* Figure 1).

Although the Romans favoured instruments such as those described above to empty stomachs, they did use emetics in cases of poisoning. These were certainly used for this purpose from classical times, and probably long before then.

Emetics

As magical cures and alexipharmics lost their credibility as remedies for poisons, the role played by emetics increased in importance.

Mineral emetics and herbs, sometimes combined with oil, were used from classical times. After its introduction into this country in the second half of the sixteenth century, the medicinal use of tobacco became popular. Salmon gave directions for preparing Spiritus Tabacca distilled from best Spanish tobacco and flegm[52] of vitriol. Two to six drachms could be taken 'in some fit vehicle' as a powerful vomit. Externally it could be used for ringworm and the itch. Further distillation of the residue in the cucurbit produced a black foetid oil. This was too 'violent' to be taken internally, but could be mixed with Lapis infernalis* to make an ointment. If five or six grains of this ointment were used to anoint the pit of the stomach it would cause the patient to vomit.[53]

By the middle of the eighteenth century, the administration of one or more emetics was the customary treatment in cases of poisoning. Drugs such as zinc sulphate, copper sulphate, tartar emetic, mustard, ipecacuanha and oxymel of squills (or common salt if these were not readily available) were given to the patient to make him or her vomit, and were often accompanied by cathartic enemas in an attempt to empty the gut from the other end. Such treatment was frequently successful if used in time.

In 1791 the *Thesaurus Medicaminum*, a compilation of remedies from many different sources, was published. In the second (1794) edition eleven pages were devoted to emetics which were in use at the time. Often two were used simultaneously, as in 'Powder with Ipecacuanha and Tartarified Antim-ony', and 'Mixture of Tartarified Antimony and Oxymel of Squill'. Sometimes they were combined with cathartics, for example 'Powder with Ipecac-uanha and Rhubarb' and 'Powder with Tartarified Antimony and Extract of Jalap'. Easier to make than the ointment given by Salmon, a tobacco poultice made from the leaves pounded with water could be applied externally in the region of the stomach,[54] and was particularly useful when emetics could not be given by mouth, for instance when the patient could not swallow. Alternatively, one could be administered by using an oesophageal tube.

Oesophageal tubes and sounds

From the fifteenth century, instruments known as oesophageal sounds had been developed for the purpose of extracting foreign bodies from the

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oesophagus or forcing them down into the stomach. They were also used for pushing food down when the patient was unable to swallow. Hollow tubes, through which liquids could be administered, were developed from these, and could have been used for administering antidotes and emetics.

Towards the end of the sixteenth century, Hieronymus Capivacceus pioneered artificial feeding. He attached an animal bladder filled with a nutritive liquid to the upper end of an oesophageal tube, pressure on the bladder forcing the food down into the stomach.[55] Unfortunately, in cases of lockjaw, if no teeth were missing it was necessary to extract some. To avoid this, Hieronymus Fabricius ab Aquapendente (1537-1619) devised an instrument which could be used for artificial feeding when the teeth were locked. This was a silver tube, preferably

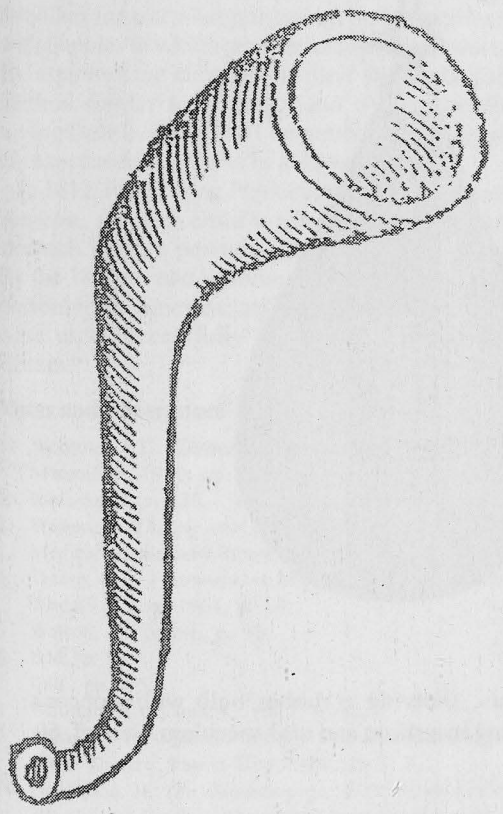

Figure 2. Tube for artificial feeding

covered with sheeps' intestine, which was curved so that it could be passed to the palate through one of the nostrils (*see* Figure 2).[56] In his *Armamentarium Chirurgicum* (1655), Johann Scultetus illustrated a curved silver tapering funnel designed to feed patients whose jaws were locked. The narrow end was inserted between the gums and introduced into the oesophagus. Bouillon or milk could then be poured into the wide end of the funnel (*see* Figure 3).[57]

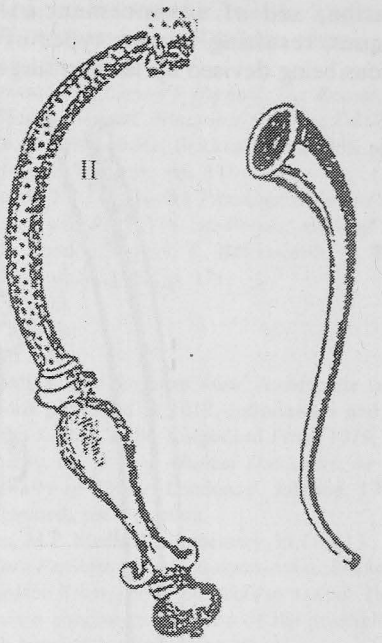

Figure 3. Oesophageal sound, left; tube for artificial feeding, right

If food and drugs could be introduced into the stomach by means of a tube, why should its contents not be evacuated by the same route? The problem was that nobody had yet constructed a tube of sufficient length and flexibility to reach from outside the mouth into the stomach itself. Such a tube was necessary if the contents of the stomach were to be aspirated by this means, either by siphonage or the use of a pump.

The flexible stomach tube

At the end of the seventeenth century, medicine in Europe was still based on the humoral theory, and experimental medicine was virtually unknown. Changes in social attitudes and in the perception of illness and disease in the eighteenth century had a radical effect upon both the teaching and the practice of medicine. These changes resulted in the introduction of new therapeutic techniques and the invention of new instruments.

This new type of medicine, conceived in the huge post-revolutionary hospitals of France, and particularly in Paris, was based on physical examination, pathological anatomy, statistics and experimental physiology. The vast numbers of impoverished patients provided doctors with the opportunity of diagnosing disease from their symptoms, rather than from personal accounts of their illness, and observing the effect of the treatments employed. New surgical procedures were tried, initially on corpses (of which there was an abundant supply), next on animals, and then on hospital patients. It was a time of great technological

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innovation, and of advancement in surgical techniques, resulting in new types of surgical operations being devised by leading surgeons.

Pressure on the bladder forced its contents down the tube (which still contained the probang), through the slit and directly into the stomach.[58]

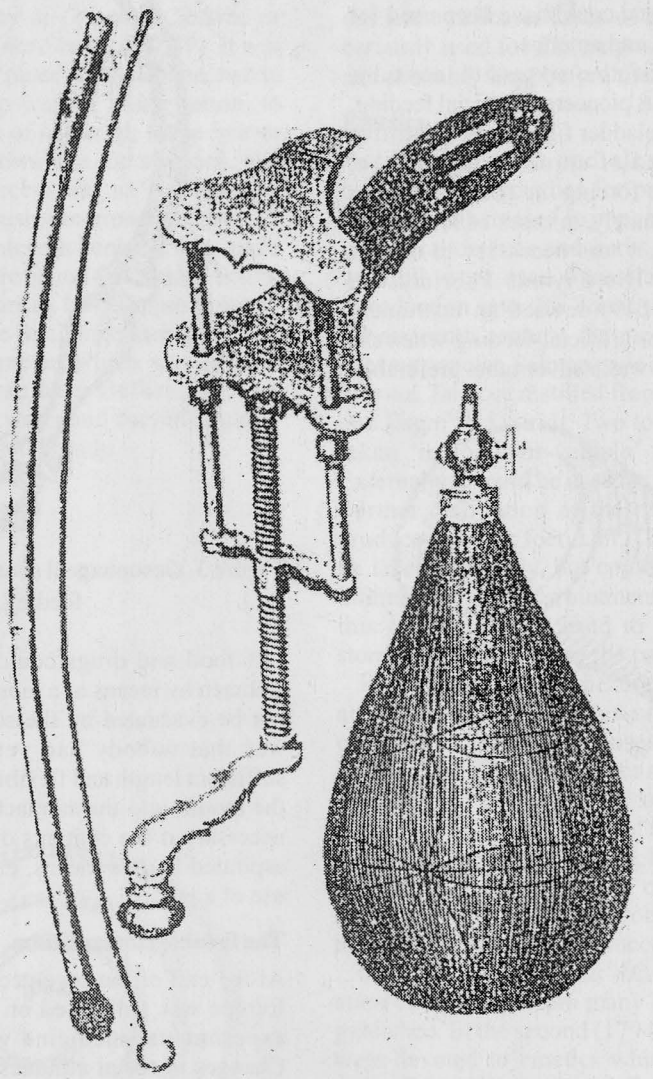

Figure 4. Apparatus used by Alexander Monro tertius, showing a rubber bulb with stopcock, oesophageal tube with copper wire used to stiffen it during insertion, and oral speculum. See ref. 60

In England a few surgeons, such as John Hunter, began to experiment with new techniques to treat their patients, and he was probably the first person to devise a tube which would reach from outside the body, past the cardiac sphincter into the stomach. It consisted of the fresh skin of a small eel, drawn over a whalebone probang tipped with a piece of sponge. Thread was tied round the skin just below and above the sponge, and a small longitudinal slit was made in the skin just above the upper ligature. It was then introduced into the stomach and a bladder containing food or medicine was attached to a wooden pipe which was then inserted into the upper end of the eelskin. However, it was never used to withdraw the stomach contents. In 1767 Alexander Monro secundus made a more practical flexible tube to remove gas from the distended stomachs of cattle. He coiled iron wire around an iron rod which was then removed and the coiled wire covered with smooth leather.[59]

The invention of the stomach tube

His son, Alexander Monro tertius made a similar, smaller tube from silver wire covered with smooth leather, the end of which was rounded to lessen the risk of damage to the oesophagus (*see* Figure 4). A stylus of thin copper wire was inserted in the cavity

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during its passage through the oesophagus to prevent excessive bending, and a gum elastic bulb fitted with a stopcock with a tapering nozzle, was filled with water and pushed into the top end of the tube. He used this apparatus, to inject a large quantity of tepid water into the stomach of a man who had taken an overdose of laudanum, and then extracted the diluted contents. The patient's mouth was kept open by the use of a Garangeot oral speculum. This experimental procedure was carried out in an attempt to save the life of a patient who had lost the power of deglutition due to the opium. Although he died, Monro believed that if the exercise had been undertaken soon after the laudanum had been swallowed his life might have been saved.[60]

The interest in saving the lives of those who had been poisoned was not confined to Britain.

In France Casimir Renault was investigating remedies for arsenical poisoning, and experimenting with puppies to which arsenic had been administered. He aspirated the contents of their stomachs using a method similar to Monro's and was successful in saving their lives. In 1801 he published the results of his experiments in Paris in a dissertation.[61]

In 1812, Philip Syng Physick, the famous American surgeon, saved a child's life by pumping out his stomach using a pewter syringe and rubber tube.[62] By the 1820s it had become a common treatment for poisoning in America, and in 1824 stomach pumps were used successfully for the first time in Great Britain.[63]

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APPENDIX

Amomum	Amomum Verum, Great Cardamom
Bezoar Mineral	Bezoarticum Minerale, made from Butter of Antimony and Spirits of Nitre
Birthwort	Aristolochia clematis
Bishop's Weed	Ammi vulgare, Herb-William, Bull-Wort
Camel's Hay	Juncus Odoratus
Castor	Large follicles found near the genital organs of the beaver
Celtic Nard	Valeriana celtica
Chalbanum	Galbanum
Costus	Costus arabicus, Sweet Costus
Creeping Birthwort	Virginia Snakeroot, Aristolochia serpentaria
Green Vitriol	Ferrous sulphate
Gutta Ammoniaca	Ammoniacum in tears
Hartwort	French Hart Wort, Seseli tortuosum, S. hippo-marathrum
Herb True-love	Herba Paris, One Berry, Solanum quadrifolium
Indian Leaf	Malabathrum folium
Jew's Pitch	Asphaltum, Bitumen Judaicum
Lapis Infernalis	Caustic Potash, Lapis Septicus
Navew	French turnip, Napus dulcis, Brassica napus
Opoponax	Oleoresin obtained from Opoponax chironium
Poley Mountain	Polium montanum, Teucrium capitatum, Lavender-leaf poly
Rape of Cistus	Hypocistis
Sagapenum	The gum of a tree, usually obtained from Alexandria
Scordium	Water Germander
Sea Hares	Mollusc of genus Tethys
Spignel	Aethusa meum
Treacle Mustard	Thlaspi arvense
Wind-Marjarom	Origanum, Bastard-marjoram, Wild marjoram, Grove marjoram

BSHP stand at British Pharmaceutical Conference, Birmingham. Left, Diana Wade, right Ann Hutton.
Photo courtesy Dr A.L.G. Pugh

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Dr Peter Worling introducing a speaker at the History of Pharmacy session, September 2000

Dr John Hunt, speaker at the History of Pharmacy session, Birmingham, September 2000

The new mug design, Rosa canina

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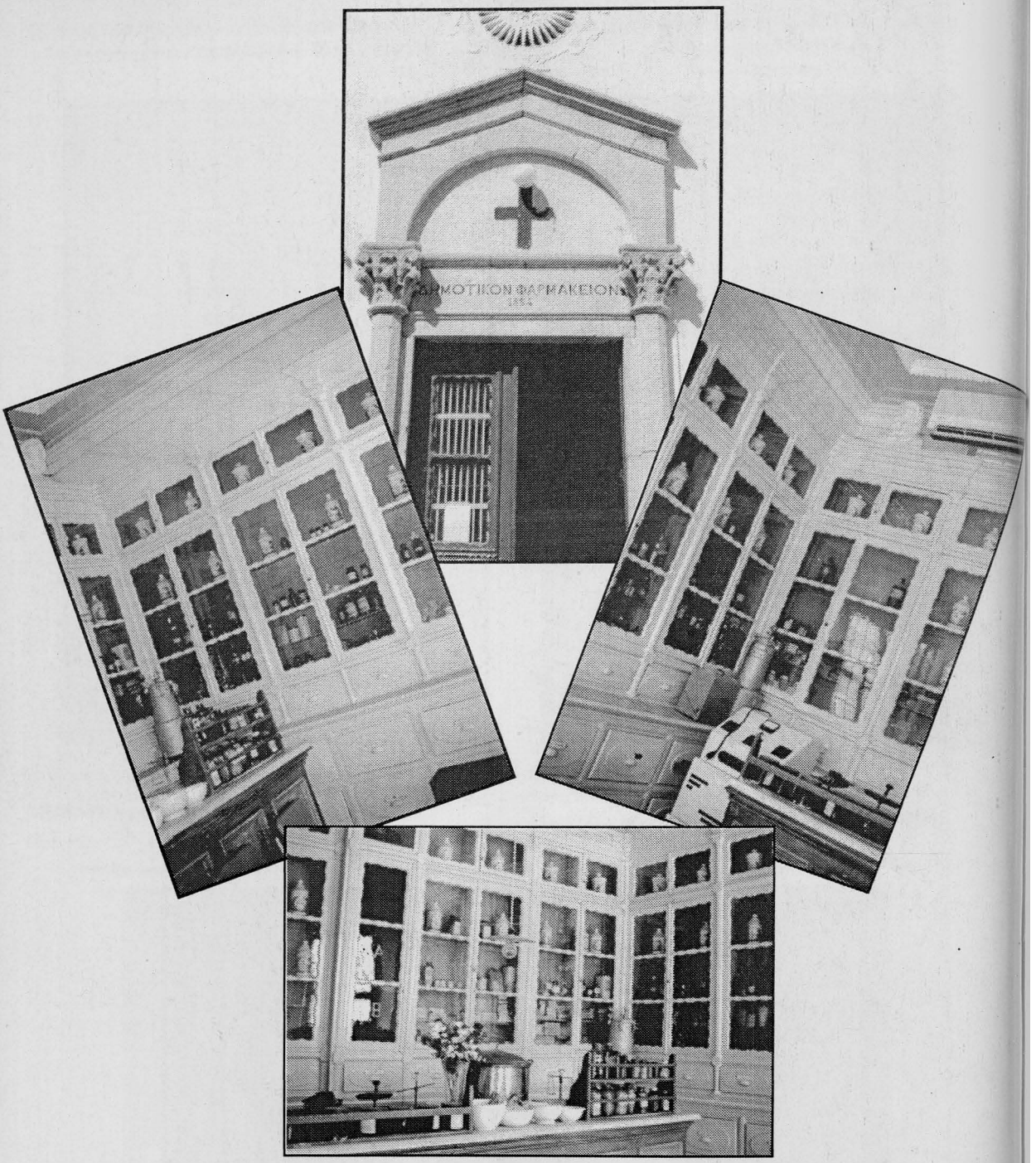

A 19th century Pharmacy in Symi, Dodecanese, Greece.

The pharmacy is in a Neo-classical building with interior fitments of the 19th century preserved intact, including a basic; no longer used, operating room. The pharmaceuticals were imported from Paris, Smyrna and Trieste. The storage jars were specially ordered from Sevres. The local doctors still come here for daily consultations.

Photo courtesy G.M.Cadman

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